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| Docket: | : | A.09-12-020 |
| Exhibit Number | : | DRA-7 |
| Commissioner | : | Peevey |
| ALJ | : | Fukutome |
| Witness | : | Phan |

**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 2011

Gas Distribution
Operation and Maintenance Expenses
(plus Technical Training and Applied Technology Services)

San Francisco, California
May 5, 2010

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# GAS DISTRIBUTION
# OPERATION AND MAINTENANCE EXPENSES
# (plus Technical Training and Applied Technology Services)

## 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 Gas Distribution operation and maintenance (O&M) expenses for Test Year (TY) 2011. This exhibit also includes DRA's assessment of and recommendations for Technical Training and Applied Technology Services. Expenses for Technical Training and Applied Technology Services are tracked separately from the O&M accounts.

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

Technical Training initiatives are designed to improve PG&E employees' skills and qualifications. Applied Technology Services (ATS) comprise a multidisciplinary team of approximately 1,000 engineers, scientists, technicians and support staff that provide assistance to various engineering and operating departments.

Activities and costs for O&M, Technical Training, and Applied Technology Services are grouped with similar types of work into a Major Work Category (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

The following summarizes DRA's recommendations for TY2011:

- DRA recommends $90.2 million for 2011 compared to PG&E's request of $155 million for Gas Distribution O&M expenses, as presented in PG&E-3, Chapter 18;
- DRA recommends $527,000 for 2011 compared to PG&E's request of $5.2 million for the Gas Meter Protection Program, as presented in PG&E-3, Chapter 19;
- DRA recommends $500,000 for 2011 instead of $19.1 million that PG&E requests for Technical Training, as presented in PG&E-3, Chapter 20; and
- DRA recommends $835,000 for 2011 instead of $1.8 million that PG&E requests for Applied Technology, as identified in PG&E-3, Chapter 23.

Table 7-1 compares DRA's and PG&E's TY2011 forecasts of Gas Distribution O&M, Technical Training, and Applied Technology expenses:

**Table 7-1**
**Gas Distribution O&M, Technical Training, and**
**Applied Technology Expenses for TY2011**
**(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) |
|---|---|---|---|---|
| **PG&E-3, Chapter 18** | | | | |
| MWC DE, Leak Survey | $14,708 | $22,100 | $7,392 | 50% |
| MWC DF, Mark & Locate | $28,222 | $29,902 | $1,680 | 6% |
| MWC DG, Cathodic Protection | $8,802 | $15,357 | $6,555 | 74% |
| MWC FH-Preventive Maint. | $16,700 | $33,800 | $17,100 | 102% |
| MWC FI-Correct. Maint. | $17,121 | $48,500 | $31,379 | 183% |
| MWC FG-Opr. Gas Sys | $3,900 | $3,900 | $0 | 0% |
| MWC GG-Gas Engineering | $3.00 | $3.00 | $0 | 0% |
| MWC GZ-Gas Dist. Res. | $750 | $1,500 | $750 | 100% |
| **GAS DIST O&M SUBTOTAL** | **$90,206** | **$155,062** | **$64,856** | **72%** |
| **PG&E-3, Chapter 19** | | | | |
| MWC EX-Meter Protection | $527 | $5,200 | $4,673 | 887% |
| **PG&E-3, Chapter 20** | | | | |
| MWC AB, Tech Training | $500 | $19,100 | $18,600 | 3720% |
| **PG&E-3, Chapter 23** | | | | |
| MWC AB, Applied Tech | $835 | $1,800 | $965 | 116% |
| **TOTAL** | **$92,068** | **$181,162** | **$89,094** | **97%** |

## III. PG&E's OVERALL REQUEST

PG&E's base year 2008 recorded O&M expenses are $139 million.[2] For 2011, PG&E forecasts $181.7 million.[3] This is an increase of $42.7 million (nominal year dollar) above the base year. The increase reflects costs associated with PG&E's implementation of a federally mandated Distribution Integrity Management

[1] Ex. PG&E-3, Workpapers Supporting Chapter 18, WP 18-16.

[2] Ex. PG&E-3, p.1-11. All dollar amounts discussed in this testimony are in nominal SAP dollars, unless otherwise noted.

[3] Ex. PG&E-3, p. 1-46.

Program, including an associated revision to leak survey intervals, and new work activities the Company forecasts for training, workforce development, and knowledge management.

These increases are captured in the following MWCs: (1) MWC AB, Technical Training, (2) MWC DE, Leak Survey, (3) MWC DF, Mark & Locate, (4) MWD DG, Cathodic Protection, (5) MWC EX, Meter Protection Inspection and Corrections, (6) MWC FG, Operate Gas System, (7) MWC FH, Preventive Maintenance, (8) MWC FI, Perform Maintenance to Correct Failures, (9) MWC GF, Operate Distribution System—Gas Mapping, (10) MWC EV, Service Inquiry, (11) MWC EW, WRO—Maintenance, (12) MWC AB, Applied Technology Services, (13) MWC GG, Operate Distribution System—Gas Engineering, and (14) MWC GZ, Gas Distribution Research. With the exception of MWCs EV, EW, and GF, which are discussed in DRA Exhibits 5 and 10, all other MWCs are addressed in this exhibit.

Of PG&E's 2011 forecast of $181.7 million, PG&E presents its request for $155 million in expenses in exhibit PG&E-3, Chapter 18. Some of the expenses identified in PG&E-3, Chapter 18, such as expenses tracked by MWCs AB and DF, are for both gas and electric distribution O&M. The Results of Operations model allocates specific amounts to gas and electric.

DRA's recommendations, as discussed in this exhibit, do not constitute the total amount forecast for gas distribution O&M expense in 2011. Rather, this exhibit presents DRA's recommendations and analysis for the specific MWCs identified above, and which are discussed in Exhibit PG&E-3, Chapters 18, 19, 20, and 23. DRA's forecasts are done by MWC and on a nominal dollar basis because PG&E's testimony and workpapers are presented in this manner. DRA's recommendations are explained further below.

## IV. DISCUSSION / ANALYSIS OF DISTRIBUTION INTEGRITY MANAGEMENT PROGRAM (DIMP)

In this General Rate Case (GRC), PG&E requests funding to address new regulations enacted by the United States Department of Transportation (DOT) requiring distribution pipeline operators to develop and follow a written distribution

integrity management plan (DIMP). PG&E, in testimony, expected the rules to be adopted in 2009 and fully implemented in 2011.[4] On April 2, 2010, PG&E filed an update to the Company's Application regarding the DIMP final rule, which became effective February 12, 2010. In this update, PG&E states that its expense forecasts as presented in Exhibit PG&E-3, Chapters 17 and 18, will not be revised because the testimony is aligned with the final DIMP rule requirements.[5] Operators are given until August 2, 2011 to write and implement their program.[6] The DIMP rule requires "a written program" addressing (1) knowledge of the infrastructure, (2) identification of existing and potential threats, (3) evaluation and prioritization of risks, (4) identification and implementation of measures to address risks, (5) measurement and monitoring of performance, (6) periodic evaluation and improvement, and (7) reporting of results. Because DIMP requirements do not prescribe specific methods of implementation, it is up to individual gas distribution operators, such as PG&E, to identify new or expanded activities to satisfy the DIMP requirements.[7]

The total requested funding for DIMP is $36.5 million for 2011.[8] DIMP work activities include new and expanded projects that are forecast to be part of PG&E's O&M programs in 2011. Since these are new or expanded activities and costs, PG&E forecasts DIMP activities and costs separately from its O&M programs, and then adds these DIMP cost estimates to the total 2011 O&M budget. The DIMP estimates are spread out and captured in MWCs DE, DF, FH, and FI. As previously mentioned, these same MWCs are also used to capture the day to day O&M expenses as well.

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[4] Ex. PG&E-3, Chapter 17, Page 17-3.

[5] PG&E 2011 GRC Supplemental Testimony, Ex. PG&E-3, Chapter 17, Gas Distribution Integrity Management Program, p. 1.

[6] http://primis.phmsa.dot.gov/dimp/

[7] Ex. PG&E-3, pp. 17-4 to 17-5.

[8] Ex. PG&E-3, p. 17-9.

In an effort to keep DRA testimony consistent with PG&E's testimony, DRA also forecasts DIMP costs separately. However, DRA does not present its analyses of DIMP work activities and costs in a separate chapter as PG&E has done. Instead, DRA presents each assessment and recommendation of DIMP activities and costs within the MWC that captures those specific DIMP activities and costs. For instance, DIMP costs for leak surveys captured by MWC DE will be discussed under DRA's analysis of PG&E's O&M request for MWC DE. DIMP costs are included in MWCs DE, DF, FH, and FI, as part of DRA's analyses of these O&M expenses below.

PG&E's 2011 forecast of $36.1 million for DIMP work activities is a significant increase to the overall O&M budget. DRA asked PG&E to explain in detail how DIMP costs were derived based on PG&E's experience with the Transmission Integrity Management Program, a program that is very similar to DIMP. PG&E did not show how the DIMP costs were determined. Instead, PG&E's response was the following:

> "DIMP procedures and cost projections include the following understanding:
>
> - Magnitude of the effort (~42,000 miles of main compared to ~ 1,100 for TIMP) and the associated research (data gathering) to know your system, determine threats, and develop mitigation plans
>
> - Associated threats and relative risk process (potentially different from TIMP due to the type of facilities)
>
> - Availability of data as greater knowledge of the system is developed"[9]

DRA also asked PG&E to describe how DIMP will be organized and managed by providing a comparison of the proposed DIMP to the current TIMP. PG&E did not

[9] PG&E's response to DRA-64, Q.3

provide a description of how DIMP will be organized and managed. PG&E simply provided a current TIMP organization chart in its response.[10]

PG&E states in testimony that it will manage DIMP using 3 teams: (1) DIMP Management Team; (2) SME teams, and (3) executive sponsor team. DRA asked PG&E to identify the number of FTEs who are SMEs, Executive Sponsors, and part of the DIMP Management Team, but the Company did not identify these numbers in its forecast.[11]

In PG&E testimony, under the section Activities and Costs to Implement DIMP, PG&E states, "Using SME (subject matter experts)...*PG&E has performed the risk identification required in the proposed DIMP regulation,* [emphasis added] and developed new and expanded existing projects, discussed in this section and summarized in Table 17-1".[12] PG&E identified several projects that are captured in MWC FH, DE, DF and FI.

DRA requested a copy of all the risk analysis that PG&E claimed it has performed and identified, but PG&E did not provide any.[13] PG&E has provided no support for its DIMP forecast. PG&E has provided no support for the Cross-Bored Sewer Project that it estimates at $3.2 million. PG&E has provided no support for the Marker Ball Installation on Unlocateable Structure that it forecasts at $1.1 million. PG&E has provided no support for the Aldyl-A project estimated at $2.1 million. PG&E has provided no support for the Service Valve Repairs/Replacement estimated at $933,000. Moreover, the increase in O&M expenses that covers the cost for service valve repairs and replacements should cover any necessary costs already marked and tracked by MWC FH.

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[10] PG&E's response to DRA-64, Q.3.

[11] PG&E's response to DRA-64, Q. 3(c).

[12] Ex. PG&E-3, p.17-7.

[13] PG&E's response to DRA-64, Q. 4(a).

Additionally, PG&E's DIMP forecast is significantly higher than what FERC estimates would cost the entire nation to implement DIMP. According to FERC, the final regulation promulgating DIMP estimates that the national costs of implementing DIMP would be $130 million in the first year, and $101 million each year for subsequent years.[14]

PG&E forecasts $36.5 million in DIMP costs for 2011,[15] but as the Company serves 1 in 20 of the U.S. population,[16] based on FERC estimates, DIMP should only cost PG&E $6.5 million a year.

PG&E has not provided any reasons as to why its DIMP estimates cost more than 5 times the national estimate. DRA recommends that the Commission adopt a forecast of $10.8 million to implement DIMP in the first year, which is still well above the FERC estimate.

DRA's analysis of PG&E's individual requests for DIMP along with DRA's presentation of alternative DIMP work levels and costs will be discussed below.

### A. MWC DE – Leak Survey

PG&E requests $22.1 million for 2011 for work activities associated with routine leak survey, special leak survey and DIMP leak survey. Of this total, $12.2 million is for routine leak survey, $3.3 million is for special leak survey, and $6.6 million is for DIMP leak survey. DRA recommends $14.7 million as the total forecast for MWC DE. See Table 7-2 for a comparison of PG&E's and DRA's 2011 forecast. DRA's analysis and recommendations are discussed below.

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[14] 74 Fed. Reg. 63932 (Dec. 2009)

[15] Ex. PG&E-3, p. 17-9.

[16] Ex. PG&E-1, p. 1-3.

**Table 7-2**
**MWC DE—Leak Survey**
**PG&E's and DRA's 2011 Forecast**
**(In Thousands of Nominal Dollars)**

| | PG&E's 2011 Forecast | DRA's 2011 Forecast |
|---|---|---|
| Routine Leak Survey | $12,230 | $8,988 |
| Special Leak Survey | $3,252 | $1,500 |
| DIMP Leak Survey | $6,623 | $4,220 |
| MWC DE TOTAL | $22,105 | $14,708 |

PG&E conducts routine leak surveys on its distribution systems to find leaks. Routine leak surveys are performed on distribution facilities located in business districts as well as outside of business districts. Distribution facilities located in business districts must be surveyed annually while those outside of business districts must be surveyed at least once every five years.[17]

Special leak surveys are performed outside of the routine leak survey schedule. An example of a special leak survey occurs when a customer complains of gas leakage or if PG&E has to survey before, during, and after major third-party construction projects.[18] PG&E also counts leak rechecks of previously identified leaks as a special leak survey.

As for DIMP leak surveys, PG&E states that, "Leak surveys are the foundation of a DIMP. These surveys are systematic searches for gas leaks in buried piping and above ground meter sets."[19] These leak surveys are part of PG&E's effort to "identify and implement measures to address risks" as required by the new regulatory requirements. Specifically, PG&E requests additional DIMP

[17] Ex. PG&E-3, p. 18-6.

[18] Ibid.

[19] Ex.PG&E-3, p. 17-17.

funding to address PG&E's change in the routine leak survey schedule, from a 5-year to a 3-year routine survey interval, for non-business districts. The DIMP forecast is specifically for the additional cost to accelerate the routine leak survey schedule.

Previously, MWC DE was used to track expenses for two work activities: (1) Routine Leak Survey and (2) Special Leak Survey. For 2011, this MWC is also used to capture the additional cost to perform leak surveys as they relate to DIMP regulations.

PG&E's 2011 forecast is based on yearly increases in the number of units and unit cost for routine leak survey and for special leak survey activities from the 2008 recorded level to the 2011 forecast. With the exception of the 2009 forecast, in which PG&E reduced the number of special leak survey units, PG&E estimates increases in the number of units and unit cost for both work activities for each year. PG&E bases the increases for both routine and special leak survey activities on an estimated 1.3% system growth rate for each year starting with the 2009 forecast.[20]

Between 2004 and 2006, PG&E spent approximately $5.6 million each year for routine and special leak surveys. In 2007, PG&E increased its spending to $8 million. However, there was a dramatic increase in expenses to $20 million in 2008. See Table 7-3 below for PG&E's annual recorded expenses for MWC DE.

**Table 7-3**

**MWC DE—Leak Survey**

**(In 000s of Nominal Dollars)**

| | Recorded | | | | | Forecast |
|---|---|---|---|---|---|---|
| MWC DE | 2004 | 2005 | 2006 | 2007 | 2008 | 2011 |
| | $5,613 | $5,651 | $5,817 | $8,037 | $20,202 | $22,106 |

[20] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 8-8.

According to PG&E, the increase in 2008 was due to the Company's correction of previously identified deficiencies associated with its leak survey program in Sonoma County.[21] In 2008, PG&E spent $12.2 million on routine and special leak surveys. The additional $8 million was spent on corrective actions associated with PG&E's discovered deficiencies.

According to PG&E, the Company implemented certain actions and mitigation measures to improve the effectiveness of its maintenance programs.[22] These corrections were part of the effort called Gas Effectiveness Evaluation and Mitigation (GEEM). GEEM work activities were part of the leak survey programs tracked under MWC DE and the regulation and valve maintenance programs tracked under MWCs FH and FI. PG&E states that GEEM activities were only needed for 2008-2010 and the Company is not seeking any GEEM funding for 2011 and beyond.[23]

For MWC DE, GEEM expenses were recorded at $8 million in 2008.[24] PG&E estimates that $19.3 million will be needed for 2009 and $9 million for 2010.[25]

Since GEEM costs, as they are included in MWC DE and MWCs FH and FI, are considered by PG&E to be one-time, non-recurrent, expenses, these costs should have been removed from the 2008 recorded expenses and forecasts for 2009, 2010, and ultimately 2011. The inclusion of these costs artificially inflates the level of expenses necessary for MWC DE. Without GEEM costs, the 2008 recorded expenses for MWC were $12.2 million.

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[21] Ex. PG&E-3, pp. 17-25 and 17-26.

[22] Ibid.

[23] Ex. PG&E-3, p. 17-27.

[24] Ex. PG&E-3, p. 18-10.

[25] Ex. PG&E-3, p. 18-10.

In PG&E's testimony, PG&E shows 2008 recorded expenses at $20.2 million.[26] If one were to compare the 2008 level to the 2011 forecast of $22.1 million, the increase does not appear to be too significant. However, the 2011 forecast is almost double the amount of the true recorded 2008 expenses for MWC DE. Without GEEM costs, and without the inclusion of the newly added DIMP expenses, the 2011 forecast for MWC DE at $15 million is still too high compared to recent historical expenses. As shown in the table above, the 2004-2006 recorded expenses ranged between $5.6 million and $5.8 million, and the 2007 recorded expenses were $8 million. DRA finds PG&E's 2011 forecast for MWC DE unsupported and takes issue with its estimates for routine leak survey, special leak survey, and DIMP leak survey.

**1. Routine Leak Survey**

In 2008, PG&E spent approximately $10 million on routine leak surveys. The Company performed leak surveys on 17,417 miles of pipes at a unit cost of $571.99 per mile. PG&E forecasts a total of $12.2 million for 2011 by performing routine leak surveys on 20,398 miles of mains at a unit cost of $599.57 per mile.[27] PG&E's rationale for the increase in the number of miles surveyed is annual system growth at a rate of 1.3%, beginning in 2008, and improved leak survey process and technique based on GEEM work. According to PG&E, in 2008, as part of the GEEM effort, PG&E improved its leak survey technique and processes and as a result, unit costs increased accordingly. PG&E states, "Beginning in 2008, the Company improved leak survey techniques, trained employees and added steps in the leak survey process."[28] The 2011 unit cost at $599.57 per mile is more than twice the unit cost of routine leak surveys performed between 2004 and 2007.

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[26] Ex. PG&E-3, p. 18-10.

[27] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

[28] PG&E's response to DRA-38, Q.3.

PG&E's unit cost forecast is also based on an annual 3.75% labor escalation rate each year beginning with 2009.

DRA takes issue with PG&E's routine leak survey forecast. DRA's analyses and recommendations are as follows.

DRA believes that the number of units (miles surveyed) in the 2011 forecast is too optimistic and the unit cost has not been adequately supported. Table 7-4 below shows PG&E's and DRA's 2011 forecasts. Table 7-4 also presents the number of miles surveyed for each year from 2004-2009. With the exception of years 2007 and 2008, the average number of miles surveyed for years 2004-2009 is 18,582 miles. In 2007 and 2008, PG&E performed GEEM leak surveys that were one-time, non recurring surveys to correct deficiencies found with its leak survey process, and the Company includes the number of miles surveyed in this data.[29] As such, the number of miles surveyed in 2007 and in 2008 do not reflect the typical routine leak survey levels performed.

**Table 7-4**
**MWC DE-Leak Survey**
**Miles Surveyed (recorded and forecast)**

| | PG&E Recorded | | | | | | PG&E Forecast | DRA Forecast |
|---|---|---|---|---|---|---|---|---|
| MWC DE | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2011 | 2011 |
| Miles Surveyed | 19,396 | 18,074 | 18,718 | 19,429* | 22,114* | 18,076 | 20,398 | 18,076 |

Source: 2004-2008 data from PG&E's responses to DRA-38, Q.7 and 2009 data DRA-163, Q.4(c).
*Years 2007 and 2008 data contains one-time non-recurring miles surveyed.

PG&E's 2011 forecast of 20,398 miles is too high because the company has not surveyed more than 19,396 miles (excluding GEEM surveys) in recent years. Although PG&E planned to survey between 19,630 and 20,162 miles from 2004-

[29] PG&E's response to DRA-38, Q.7.

2008, in reality the number of miles surveyed fluctuated between 17,417 and 19,396 for each of these years.[30] PG&E has not exceeded any planned surveys in any year during this period. The most number of miles actually surveyed were 19,396 miles in 2004.

PG&E's rationale of system growth of 1.3% for the increase in the number of miles surveyed in 2011 is unsupported. As Table 7-4 above shows, the number of miles surveyed each year from 2004 to 2009 fluctuates, with a high of 22,114 miles and a low of 18,074 miles, and does not appear to be dependent on system growth. According to PG&E data, the average system growth rate from 1998-2008 is 1.3% and there has been growth in PG&E's system every year.[31] If system growth rate was the determining factor in the number of miles surveyed for leaks, there would be a steady increase in the number of miles surveyed for leaks each year. But this is not the case.

In recent years, PG&E's actual number of miles surveyed appears to be quite stable and remains around 18,000 miles, if 2007 and 2008 data is excluded. In 2009, PG&E surveyed 18,076 miles. PG&E's response to DRA-163 shows that only 17,417 miles were surveyed in 2007. Although PG&E justified a higher forecast for 2009 compared to the 2008 level of miles surveyed (19,879 miles forecast compared to 17,417 miles surveyed) and based its forecast on the 1.3% system growth rate there was, apparently, no effect of such system growth on the actual number of miles surveyed. In 2009, the company only surveyed 18,076 miles.[32] The 2009 recorded number of miles surveyed compares closely to the 2005, 2006, and 2008 number of miles surveyed.

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[30] PG&E's response to DRA-163, Q. 4 (c). DRA notes that in this response, PG&E shows that 17,417 miles were surveyed in 2008. This number is 4,697 less than the number of miles provided for the response to DRA-38, Q.7, wherein PG&E shows that it surveyed 22,114 miles in 2008.

[31] PG&E's response to DRA-210, Q.1.

[32] PG&E's response to DRA-163, Q. 4 (c).

Instead of basing the 2011 forecast on estimated system growth, which does not appear to influence the actual number of miles surveyed, DRA recommends using the 2009 recorded level of miles surveyed, 18,076 miles, as the forecast for 2011. This number shows the most current level of leak surveys performed. DRA finds that the 2009 level of completed work comparable to the actual levels of miles surveyed the past 5 years. The 2004-2008 average number of miles surveyed (excluding the 2007 recorded) is 18,401 miles.[33]

As for the unit cost, DRA recommends using the PG&E 2010 forecast of $497.26 per mile because this cost is reasonable. DRA does not take issue with the increase in the unit cost above base year for leak surveys as a result of improved techniques and processes that PG&E has put in practice as a result of GEEM. However, PG&E has not justified its proposed $599.57 unit cost for 2011.

To get the 2011 unit cost, PG&E escalated the 2009 labor forecast and added 10% for mapping cost. In 2008, PG&E's unit cost was at its highest, doubling the recorded costs of the past 5 years.[34] In 2009 and in 2010, the unit cost decreased each year and PG&E attributes these decreases to performance savings. PG&E explains, "[b]ased on the revised leak survey schedules...PG&E estimates that the 2008 leak survey unit cost exceeds the steady-state unit cost due to the adjustments and learning associated with implementing new procedures. As such, PG&E anticipated a decreased leak survey unit cost in 2009 and 2010 based on surveyors adjusting to the revised procedures and their performance moving towards the steady-state leak survey productivity."[35] Since PG&E believes that by 2011, the leak surveyors will be more familiar with the new procedures and will reach "steady-state", the PG&E 2010 unit cost should be used as the basis for the 2011 forecast.

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[33] Using 17,471 as the number of miles surveyed for 2008, based on PG&E's response to DRA-163, Q.4 (c)

[34] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

[35] PG&E's response to DRA-163, Q. 4 (h)(iv).

DRA believes the additional 10% for mapping costs were erroneously included as these costs are historically embedded in leak survey costs. According to PG&E, "These mapping costs have historically been included in the forecasted and recorded cost of leak survey work."[36] By adding an extra 10% to the already included cost of mapping, PG&E would be double counting this cost.

Based on these reasons, DRA concludes that the 2011 unit cost unjustified. DRA recommends using the PG&E 2010 forecasted unit cost as this seems the most reasonable.

By using the 2009 recorded number of miles surveyed, 18,076 miles and the PG&E 2010 forecasted unit cost of $497.26 per mile, DRA's recommendation is $8,988,471 for 2011. Compared to PG&E's forecast of $12,230,029, DRA's forecast is $3,241,558 lower for 2011.

**2. Special Leak Survey**

In 2008, PG&E spent $2.2 million and performed 2,153 miles of special leak surveys. For 2011, PG&E forecasts a total of $3.3 million, and increase of $1.1 million, for 1,984 miles of special leak survey. PG&E's 2011 forecast for special leak survey is also based on a 1.3% annual system growth and an annual 3.75% labor escalation rate each year beginning with 2009.

DRA takes issue with PG&E's 2011 number of units and unit cost forecast for special leak survey. DRA finds PG&E's justification of system growth unsupported and the annual 3.75% labor escalation rate unjustified because PG&E did not make any adjustments for productivity or performance improvements as a result of the new leak survey process and techniques. DRA takes issue with the system growth argument for all the reasons discussed in the routine leak survey section. Mainly, PG&E has shown no correlation between system growth and PG&E's actual level of miles of leak surveyed. PG&E's special leak surveys also fluctuate between 1,039 miles and 2,404 miles between 2004 and 2008 even though there was consistent annual system growth.

[36] PG&E's response to DRA-163, Q.4.

Since special leak surveys are essentially surveys that are not on an annual, 3-year, or 5-year schedule, and are not classified under routine leak survey, PG&E's leak surveyors should be able to move toward the steady-state of leak survey productivity that PG&E touted for the routine leak surveys.[37] PG&E's calculation of the special leak survey unit cost did not take this into consideration.

DRA would recommend using the PG&E 2010 forecasted unit cost for special leak surveys in order to be consistent with the routine leak survey forecast. However, the PG&E 2010 unit cost is based on the 2008 unit cost, which PG&E admitted was unreliable. PG&E states, "The 2008 unit cost is significantly lower than the historical numbers...and may have occurred due to a unit reporting error."[38] PG&E states that, "...a portion of which (special leak surveys) were miscounted to create the "unit reporting error"...PG&E identified several divisions where the unit counts appeared inaccurate. However, the extreme manual nature of counting leak survey miles prevented a thorough recount"[39] In other words, PG&E does not know what the actual number of miles surveyed for special leak surveys in 2008. Without this information, there is no way to determine an accurate unit cost for special leak surveys for 2008, which is the base year and from which PG&E escalates annual labor costs to derive the 2011 forecast.

DRA is not able to use the 2007 unit cost either because of inconsistencies that PG&E has identified. DRA also believes that the 2007 unit cost is also unreliable. According to PG&E's workpapers, dated December 21,2009, the company performed 1,417 miles of special leak surveys at a unit cost of $1,854.91 per mile in 2007.[40] Yet, in a response to a DRA data request, dated October 8, 2009, PG&E states that the company completed 2,254 miles with a unit cost of

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[37] PG&E's response to DRA-38, Q.3. According to PG&E, the Company improved its leak survey techniques beginning in 2008.

[38] Ex.PG&E-3, p. 18-9.

[39] PG&E's response to DRA 38, Q. 8 (c) and (d).

[40] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

$1,166.06 per mile.[41] In this same response, PG&E further instructed DRA to correct the special leak survey units and unit costs in its response to several of DRA's other deficiency notices and data requests. This response, however, did not provide any explanation for the inconsistencies with the number of miles surveyed or the unit cost for 2007. Again, DRA finds that the 2007 recorded expenses are unreliable.

As such, DRA's 2011 forecast is based on PG&E's 2006 level of work and unit cost. The 2006 recorded expenses were $1,507,254 for 1,039 miles of special leak surveys. The 2006 level of expenses makes a reasonable forecast because it incorporates an increase in leak rechecks, which is a major component of special leak surveys. DRA recognizes that, as a result of changes to PG&E's leak survey techniques and processes, PG&E is finding more leaks per mile surveyed and therefore will need to perform more lead rechecks. The 2006 level includes a higher percentage of leak recheck mileage compared to any other years from 2004-2008, which was the year PG&E changed its leak survey techniques and processes. In 2006, 42% of the special leak survey mileage was made up of leak rechecks. In all other years during the 2004-2008 period, the leak rechecks percentage ranged between 20% and 32%. According to PG&E, the one identifiable driver of the unit cost increase is leak rechecks.[42]

For the reasons discussed above, DRA recommends $1.5 million as the 2001 forecast for special leak surveys. Compared to PG&E's forecast of $3.3 million, DRA's forecast is $1.8 million lower.

### 3. DIMP Leak Survey

The DIMP leak survey forecast is for additional expenses for routine leak surveys in order to move from a 5-year to a 3-year routine leak survey schedule for Grade 3 leak rechecks and for leak survey work associated with copper services.

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[41] PG&E's response to DRA-38, Q. 4.

[42] PG&E's response to DRA-38, Q.4.

PG&E forecasts a total of $6.6 million for these work activities under DIMP. Of the $6.6 million, the shorter schedule is estimated to cost $5.153 million. The remaining $1.4 million is for the Grade 3 leak rechecks and copper leak surveys.

DRA takes issue with PG&E's cost estimate to transition to the 3-year cycle. Specifically, DRA disputes PG&E's forecast of the number of additional miles the Company needs to survey to transition to the 3-year leak survey schedule. DRA also disputes the unit cost forecast for these additional miles because PG&E has not presented adequate support. DRA does not dispute the $1.3 million for the Grade 3 leak rechecks and copper leak surveys.

PG&E forecasts that it will need to perform an additional 8,595 miles in 2011, in order to transition to the 3-year leak survey cycle.[43] PG&E calculated this number by subtracting the number of miles that the Company forecasts it will survey annually on the 5-year schedule from the number that it has to survey on a 3-year schedule (28,992 miles-20,398 miles =8,595 miles).[44]

PG&E's forecast is flawed. PG&E's forecast of 8,595 additional miles comes from a calculation that includes miles already scheduled on annual and existing 3-year leak survey schedules, and that are not affected by the move from a 5-year leak survey schedule to a 3-year leak survey schedule. According to PG&E, DIMP leak surveys are incremental miles needed to move from a five year to a three year interval.[45] Leak surveys that are currently on an annual and existing 3-year leak survey schedules are already accounted for under the normal expenses for routine leak surveys. By including the number of miles already surveyed under the annual and the 3-year leak survey schedules, PG&E artificially inflates the number of additional miles necessary to transition.

PG&E also included 1.3 percent annual system growth for 2009-2011 in its estimate of the number of miles the Company needs to survey in 2011. As

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[43] Ex. PG&E-3, p. 17-18.

[44] Ex. PG&E-3, p. 17-18.

[45] Ex. PG&E-3, pp. 17-18 and 17-19.

discussed above, PG&E's claim that system growth impacts the level of miles surveyed has not been adequately supported. DRA recommends using the actual number of miles surveyed in 2009, which is also the number that DRA forecasts as the number of miles to be surveyed under routine leak surveys for 2011, to calculate the DIMP leak survey difference. Instead of the difference being 8,595 as PG&E claims, DRA's calculations yields 5,532 additional miles. DRA's number is calculated by changing the number of miles that are currently on the 5-year cycle to the 3-year cycle and taking the difference between this number and the annual number DRA forecasts for routine leak survey above.[46]

Also, DRA takes issue with PG&E's unit cost for the DIMP surveys. The unit cost of $599.57 per mile that PG&E forecasts for 2011 is unsupported. PG&E uses the same reasons as the routine leak surveys to justify the unit cost for the DIMP surveys.

DRA recommends using the PG&E 2010 unit cost forecast of $497.26 per mile for the 5,532 additional miles for the same reasons discussed above—mainly because the PG&E 2010 unit cost is reasonable and it incorporates the 'steady-state' performance that the leak surveyors will have achieved after having surveyed for leaks using the new techniques and processes for several years.

DRA's 2011 recommendation for the shorter schedule is $2.8 million compared to PG&E's forecast of $5.2 million. For the total DIMP leak surveys, DRA's recommendation is $4,220,000, which includes the $1.4 million for the Grade 3 leak rechecks and copper leak surveys that DRA does not dispute. This is a difference of $2,403,000 compared to PG&E's forecast of $6,623,000.

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[46] DRA's calculation is as follows: PG&E shows the total number of 5-year miles as 70,823 (PG&E-3, p.17-18). DRA divided this number by 3 to get 23,608 miles each year. This is the number that PG&E will need to survey annually to transition to the 3-year cycle. Currently, PG&E is on the 5-year cycle for routine leak survey and accordingly, DRA's forecast is 18,076 miles for 2011. The number of additional miles that PG&E will need to transition to the 3-year leak survey is the difference between the current work schedule and the accelerated one: 23,608-18,076=5,532 miles.

## B. MWC DF – Mark and Locate

MWC DF tracks expenses associated with both gas and electric distribution mark and locate work.

PG&E forecasts $29.9 million in 2011 for MWC DF. This amount includes the cost of processing 553,720 USA tags for $28.6 million and the costs of membership in the one-call centers and DIMP Mark and locate, which totals $1.1 million. The 2011 forecast is a decrease of $2.9 million compared to the 2008 recorded expenses. DRA recommends $28.2 million for 2011. See Table 7-5 below for PG&E's 2004-20008 recorded and PG&E's and DRA's 2011 forecast for MWC DF expenses.

**Table 7-5**
**2004-2008 Recorded and 2011 Forecast Expenses for MWC DF**
**(in Thousands of Nominal Dollars)**

| | Recorded | | | | | PG&E Forecast | DRA Forecast |
|---|---|---|---|---|---|---|---|
| **Description** | **2004** | **2005** | **2006** | **2007** | **2008** | **2011** | **2011** |
| General | $1,003 | $1,334 | $1,210 | $981 | $1,112 | $1,069 | $1,069 |
| Mark & Locate | $25,491 | $26,311 | $27,131 | $27,997 | $31,525 | $28,566 | $26,886 |
| DIMP Mark & Locate | - | - | - | | $128 | $267 | $267 |
| **Total** | **$26,495** | **$27,645** | **$28,341** | **$28,978** | **$32,764** | **$29,902** | **$28,222** |

Source: PG&E-3, WP 18-16.

PG&E's forecast is based on an increase of 78,256 USA tags above the recorded 2008 level of 512,682 tags. According to PG&E, the forecast was calculated based on an annual 2.6% system growth from the 2008 recorded tickets.[47]

DRA takes issue with PG&E's forecast of the number of units for Mark and Locate. DRA believes that PG&E's estimating methodology for 2011 is inappropriate. PG&E states, "The 2011 unit forecast (553,720 USA Tags) is based on escalating the 2008 recorded units (512,682 USA Tags) by 2.6% each year...

[47] Exhibit PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-20

The 2.6% escalation was the average increase in USA Tags for each year from 1998 to 2008, and represents an appropriate escalation rate to determine the 2011 unit forecast."[48] PG&E doesn't explain why using 10 years of data to forecast the number of tags for 2011 represents an "appropriate escalation rate." But according to the USA tags data presented in testimony, the 10 years of data would include some of the highest increases recorded for tags.[49] For instance, the tags recorded for 2002, which is one of the years in the 10 years that PG&E uses in its forecast, shows a 17.7% increase above the 2001 level. The increases in tags for the 1998-2000 timeframe is also significant compared to other years, with increases from 10.8% to 13.1%. See Table 7-6 below for the number of USA tags recorded, and annual increases, for years 1998-2008.

**Table 7-6**

**PG&E's Recorded USA Tags (1998-2008)**

| | Year | USA Tags | % Increase |
|---|---|---|---|
| 1. | 1998 | 394,969 | 10.8% |
| 2. | 1999 | 442,325 | 12.0% |
| 3. | 2000 | 500,109 | 13.1% |
| 4. | 2001 | 508,237 | 1.6% |
| 5. | 2002 | 598,227 | 17.7% |
| 6. | 2003 | 663,325 | 10.9% |
| 7. | 2004 | 711,476 | 7.3% |
| 8. | 2005 | 538,274 | (24.3)% |
| 9. | 2006 | 510,258 | (5.2)% |
| 10. | 2007 | 523,391 | 2.6% |
| 11. | 2008 | 512,682 | (2.0)% |

Source: PG&E-3, P. 18-12

[48] PG&E's response to DRA-197, Q.1.

[49] Ex. PG&E-3, p. 18-12.

Using 10 years of data, from 1998-2008, is inappropriate here because between 2004 and 2008, with the exception of 2007, there have been decreases in the number of USA tags. This is a significant change because from 1994-2004 there were increases in USA tags every year. However, DRA does not see the trend of increases in tags continue in recent years. In fact, PG&E recorded only 453,934 USA tags in 2009.[50] This is a decrease of 58,748 tags, or 11.5%, compared to the 2008 level. DRA is not confident that USA tags will continue to increase above the 2008-2009 level in 2011 since current signs continue to show the economy still struggling. As PG&E points out, "USA tags are driven by construction activity such as new home construction, communications installations, water, sewer and roadway projects," DRA is not confident that these activities will pick up above current levels. Moreover, PG&E has not convinced DRA, through the showings in its testimony, workpapers, or responses to DRA data requests, that the economy will improve enough to support an increase of 2.6% in USA tags.

DRA recommends using the 2005-2008 recorded average as the 2011 forecast since it shows the most recent number of USA tags recorded and incorporates the number of tags before and after the economic crisis. The 2005-2008 average is 521,151 USA tags. This number equates to a 1.7% increase above the 2008 recorded level.

DRA takes no issue with PG&E's 2011 unit cost forecast of $51.59 per tag.

DRA's recommendation for MWC DF is $26,886,196 for a total of 521,151 tags, at a unit cost of $51.59 per tag. DRA's forecast is comparable to the 2004-2007 recorded expenses level.

DRA takes no issue with the forecasted cost of membership of $1.1 million tracked by the "General" cost category and $267,000 for "DIMP mark and locate", for a combined estimate of $1.2 million.

DRA's MWC DF forecast is $28.0 million and is $1.9 million lower compared to PG&E's forecast of $30.0 million.

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[50] PG&E's response to DRA-187, Q.2.

## C. MWC DG – Cathodic Protection

MWC DG tracks expenses to perform cathodic protection on buried carbon steel facilities in PG&E's territory. Cathodic protection, or CP, is a method PG&E uses to prevent corrosion of the metal surface buried in soil. PG&E does this by applying a direct current from an anode to the facility being protected. PG&E's system requires monitoring on regular intervals to ensure that adequate levels of current are maintained. According to PG&E, corrosion on gas piping systems can cause leaks and other potential safety hazards.[51]

PG&E requests $15.4 million in 2011 to perform 5 separate work activities: (1) CP monitoring, (2) CP resurveying, (3) CP troubleshooting, (4) CP isolated services, and (5) CP field support. This is an increase of $5.220 million compared to the 2008 recorded total of $10.1 million. From 2004 to 2008, the recorded expenses for MWC range between $8.0 million and $10.1 million. See Table 7-7 below for a summary of the 2004-2008 recorded and PG&E's and DRA's 2011 forecast for MWC DG expenses.

**Table 7-7**
**2004-2008 Recorded and 2011 Forecast Expenses for MWC DG**
**(in Thousands of Nominal Dollars)**

| | Recorded | | | | | PG&E Forecast | DRA Forecast |
|---|---|---|---|---|---|---|---|
| **Description** | **2004** | **2005** | **2006** | **2007** | **2008** | **2011** | **2011** |
| CP Monitoring | $1,874 | $1940 | $2,053 | $2,265 | $3,266 | $2,887 | $2,540 |
| CP Resurveying | $1,611 | 1,161 | 490 | $480 | $790 | $1,421 | $414 |
| CP Troubleshooting | $4,201 | $4,034 | $4,245 | $4,350 | $3907 | $4,259 | $4,259 |
| CP Isolated Services | $649 | $879 | $1,146 | $2,021 | $1,223 | $5,817 | $1,223 |
| Support | $1,231 | $164 | $63 | $87 | $950 | $973 | $366 |
| **Total** | **$9,567** | **$8,178** | **$7,996** | **$9,202** | **$10,136** | **$15,357** | **$8,802** |

[51] Ex. PG&E-3, pp. 18-14 and 18-15.

DRA concludes that PG&E's 2011 overall forecast for MWC DG overly ambitious. DRA takes issue with PG&E's 2011 forecast and finds that PG&E lacks support for the number of units and unit costs with each of the 5 various CP work activities.

### 1. CP Monitoring

For CP monitoring, PG&E forecasts that it will need $2.9 million to perform 61,107 pipe-to-soil measurements in 2011. Compared to the 2004-2008 average, which is 56,137, PG&E's 2011 forecast of an increase of 9% is too high. The level of measurements taken between 2004 and 2008 was quite stable and ranged between 53,766 and 58,810.[52] PG&E has not offered any justification for the increase in number of measurements in the forecast. PG&E simply claims that the increase is expected as "corrosion mechanics progressively identify additional monitoring points from CP resurvey results and after including 10 percent of isolated steel services through the CP Isolated Services Program."[53] According to PG&E, the 2011 CP monitoring forecast is dependent on the level of work activities forecasted for CP resurvey and for CP isolated services.

In PG&E's workpapers, the Company states that it would need to increase the unit of measurements by 5% in 2009, 2.46% in 2010, and 5.62% in 2011.[54] PG&E claims that the increase of CP monitoring work is based on additional locations identified through CP resurveying and CP Isolated services. However, no support or justifications were provided to show how the annual increases were based on CP resurveying or CP isolated services activities in PG&E's testimony, workpapers, or data responses.[55]

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[52] PG&E-3, P. 18-19.

[53] Ex.PG&E-3, p. 18-16.

[54] PG&E-3, Workpapers Supporting Chapter 18, pp. WP 18-21 to 18-23.

[55] PG&E-3 Workpapers Supporting Chapter 18, pp. WP 18-21 to 18-23, PG&E's response to DRA-DEF-41, Q.3.

DRA concludes that PG&E's 2011 request for CP Monitoring unsubstantiated since PG&E has offered no justification for increases in CP resurveying, which DRA will show below.

Due to lack of adequate support by PG&E, DRA is not confident that PG&E will conduct the number of pipe to soil read in. Therefore, DRA recommends using the base year recorded number of pipe to soil read, which is 53,766, and using the PG&E 2011 unit cost forecast of $47.25 per read, to forecast for 2011.

DRA's recommendation is $2.5 million, compared to PG&E's request of $2.9 million for CP monitoring.

**2. CP Resurveying**

PG&E requests $1.4 million to resurvey 632 CP areas (CPAs) in 2011. This is an increase of $630,000 compared to the 2008 recorded expenses. In 2008, PG&E resurveyed 398 CPAs.[56] PG&E states that "...a 50% increase from 2008...[is] necessary to meet the system minimum goal."[57]

DRA asked PG&E to explain the "system minimum goal," and to show how PG&E's 2009, 2010, and 2011 forecasts are necessary to meet the system minimum goal. PG&E did not provide any calculations or justification for the specific increases in the number of miles for CP resurvey or explain how these increases will meet the "system minimum goal."[58] Instead, PG&E responded by stating that CPAs should be resurveyed every 6 years according to PG&E Work Procedure 4133-02 and that the 2009 and 2010 unit forecasts ensure that PG&E meets the system goal of surveying all CPAs on a 6-year cycle.[59]

PG&E's claim that it needs to resurvey more CP areas compared to the 2008 level, in order to meet the "system minimum goal", is completely erroneous. In 2008,

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[56] PG&E-3, p. 18-19.

[57] Ex.PG&E-3, p. 18-17.

[58] PG&E's response to DRA-58, Q.7.

[59] Ibid.

and in previous years, PG&E was on a 5-year resurvey schedule.[60] According to PG&E, "the CPA resurvey cycle changed from every 5 years to a 6-year cycle in May 2008."[61] Compared to the new 6-year schedule, PG&E would have had to perform more resurveys each year in 2008 compared to 2011.

The 2011 unit forecast for CP resurveying is unsupported. DRA recommends using the 2008 recorded units as the basis for 2011. The 398 CPA units in 2008 reflect the change to the new 6-year schedule for CP resurveying.

DRA further finds that PG&E has no support for its proposed unit cost of $2,248 per CPA resurveyed.

According to PG&E, the 2011 unit cost is calculated by taking the estimated 2011 unit cost, escalating it for labor, and then doubling it.[62] DRA takes issue with this because the 2011 unit cost is based on a forecast and based on PG&E's baseless doubling of costs. DRA also takes issue with the 2011 unit cost because PG&E could not explain how this cost increased from the base year forecast.[63]

Since PG&E has no support for the 2011 unit cost forecast, DRA recommends using the PG&E 2009 unit cost forecast as the basis for the 2011 forecast. The 2009 and 2010 PG&E unit cost forecasts shows that PG&E expects the unit cost to decrease from the base year. Since PG&E could not demonstrate why this cost should be doubled in 2011, DRA believes that the PG&E 2009 unit cost forecast is reasonable.

DRA's recommendation is for 398 CPAs at a unit cost of $1,039 per CPA. The DRA 2011 forecast is for $414,000. Compared to PG&E's forecast of $1.4 million, DRA's recommendation is $1 million lower.

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[60] PG&E's response to DRA-210, Q.5.

[61] Ibid.

[62] PG&E's response to DRA-60, Q.2.

[63] PG&E's response to DRA-210, Q. 6.

### 3. CP Troubleshooting

PG&E forecasts $4.3 million to troubleshoot 2,972 CP areas. This forecast compares closely with the 2004-2008 recorded average, which is $4.1 million, and DRA takes no issue with it.

### 4. CP Isolated Services

PG&E requests $5.8 million to evaluate 110,000 isolated services in 2011. Isolated services are buried steel risers that have been isolated from the CP system as a result of past reconstruction projects. According to PG&E, the CP Isolated Services Project was developed to identify these locations and to verify CP levels on these services in a systematic manner. Those locations found with inadequate CP would need to be cathodically protected.[64]

PG&E's forecast is based on an increase in the number of units that need to be evaluated and an increase in unit cost above the 2008 level. PG&E states the unit cost increase reflects the higher amount of crew labor and site restoration required for the balance of locations.[65] As for the increase in the number of units, PG&E states that the Company needs to evaluate 110,000 units to complete the program by the end of 2012.[66] The number of units forecast for 2011 is 218% above the 2008 level of work of 34,518 services. PG&E's expense forecast is $4.6 million higher than the recorded 2008 level.

DRA asked PG&E to provide the scope of the program and to explain the increase in the number of units forecast. For the program scope, PG&E provided a spreadsheet which shows 337,287 as the estimated total number of field check sites.[67] PG&E claims that there are 337,287 locations requiring evaluation over the

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[64] Ex. PG&E-3, p. 18-17.

[65] Ex. PG&E-3, p. 18-17.

[66] Ex. PG&E-3, pp. 18-17 and 18-18.

[67] PG&E's response to DRA-58, Q.6, Att.1

course of the 10-year program, which was started in 2002.[68] According to PG&E, the Company evaluated approximately 74,000 of the 337,000 locations in the program by the end of 2008, leaving 263,000 to be evaluated from 2009-2012.[69] What these numbers show is that PG&E will need to perform an average of 65,750 services each year to finish out the program by year end 2012.

DRA takes issue with PG&E's 2011 forecast for two reasons. First, the 337,000 locations do not represent the true work level of the program, and second, the number of units for 2011 is highly inflated and estimated at a level that has been unprecedented in the program's history.

Based on a response to a DRA's data request, the number of locations used to forecast the 2011 level of work is not an actual number of locations that PG&E needs to evaluate. In fact this number appears to be just a place holder. PG&E's response to DRA states the following:

> "PG&E's gas distribution system is dynamic and between the time the total program volume of 337,000 locations was determined and the time field inspections are completed system conditions may change. For example, in the course of other work including leak repairs, capital replacement programs, or modifications to facilities at customer request, PG&E may restore cathodic protection to a single service or section of distribution main and associated services. Therefore, ***this work would have the collateral affect of removing these locations from the previous program scope***. Therefore, our experience shows that the estimated volume of work is subject to change..."[70]

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[68] PG&E's response to DRA-58, Q. 6. (a)

[69] PG&E's response to DRA-58, Q. 6(b).

[70] PG&E's response to DRA-210, Q.4(a).

Since PG&E restores cathodic protection to services and distribution mains as part of its ongoing cathodic protection program, the 337,000 locations is not a realistic number. The data response above shows that if cathodic protection is restored to services or sections of distribution mains and associated services, some (maybe even many) of the estimated 337,000 isolated services would be protected, and therefore, would not require additional work from the CP Isolated Services Project.

Additional information provided by PG&E shows that 337,000 does not represent an accurate number of locations that PG&E needs to evaluate. In a response to DRA data request PG&E states, "In order to ensure that PG&E has identified and corrected all isolated service locations, the original estimate for the volume of potential locations in each division intentionally included all possible locations regardless of how remote the possibility."[71] This response admits that the 337,000 locations include all potential locations and not actual locations identified as needing to be assessed.

Based on the information provided, DRA concludes that PG&E has no support for the claim that it needs to dramatically increase the number of isolated services evaluated in 2011 in order to evaluate the identified 337,000 services and complete the program.

Moreover, if PG&E were serious about completing the program by 2012, the Company should have been evaluating the isolated services on a more aggressive schedule. Instead, the rate of evaluation averaged approximately 5,600 per year.[72] PG&E states that it increased this volume to 28,500 per year in 2007 and 2008 in order to complete the program by 2012.[73] However, this number is significantly less than the 110,000 that PG&E forecasts for 2011. While PG&E states that it is increasing the volume of work for isolated services in order to complete the program

[71] PG&E's response to DRA-210, Q. 4(b).

[72] PG&E's response to DRA-58, Q.2.

[73] Ibid.

by 2012, PG&E's 2009 and 2010 forecasts show a decrease in the level of work. For 2009, PG&E forecasts 71% lower services evaluated than the 2008 level. And for 2010, PG&E forecasts 49% lower services evaluated than the 2008 level. PG&E's claim that it needs to ramp up this project significantly should be disregarded completely when one looks at the 2009 recorded work level. In 2009, PG&E evaluated only 459 locations![74]

The Code of Federal Regulations Title 49, Part 192, Section 465, requires PG&E to do the following: "...At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period."

Since PG&E has known about these locations since 2003[75] and since the Company is required to survey at least 10 percent of these locations each year, all of the identified locations should be evaluated by the end of 2012. PG&E should not have been delaying the evaluations until the end of the program and loading the work required in the test year.

PG&E has not adequately supported the request to increase expenses for CP isolated services for the test year. As such, DRA recommends the 2008 recorded level of $1.2 million as the 2011 forecast. This forecast is reasonable because the 2008 level of work is the highest compared to recent years and should allow for PG&E to make up any delayed work from 2004. PG&E only completed 6,593 services in 2004, 5,101 services in 2005, and 5,246 services in 2006.[76]

DRA's recommendation of $1.2 million is $4.6 million lower than PG&E's request for 2011.

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[74] PG&E's response to DRA-210, Q.2.

[75] PG&E's response to DRA-210, Q. 3 (a).

[76] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

### 5. CP Field Support

PG&E requests $973,000 for CP Field Support in 2011. According to PG&E, field support staff includes a part-time program manager and three corrosion specialists that are responsible for developing company work procedures; managing and implementing corrosion-related projects; and supporting field personnel.[77] PG&E's request is $23,000 higher than the 2008 recorded cost of $950,000. In its testimony, PG&E does not discuss the cost or reasons for the minor increase. PG&E's workpapers show a minor increase due to 3.75% labor escalation.

DRA takes issue with PG&E's 2011 forecast because the Company forecasts a steady level of cost, beginning in 2009, that is significantly higher than recent historical level. The 3-year average expense for 2005-2007 is only $104,424 and the 2011 forecast is for $973,000.[78] PG&E's recorded expenses show that the spending for this account fluctuated for the past 5 years, from a low of $63,000 to a high of $1.2 million. PG&E has provided no justification to show that in 2011 the spending in this account will remain at the higher-than-historical spending level of 2008.

Since PG&E has not offered adequate support for this request, DRA recommends using the 3-year average of 2006-2008 amount of $366,482 for the forecast. DRA's recommendation is $606,415 lower compared to PG&E's request of $972,897.

## D. MWC FG– Operate Gas System

This MWC tracks expenses to operate mains and services, to operate regulator stations, and for some gas and electricity usage.

DRA does not take issue with PG&E's forecast for MWC FG, $3.9 million. The 2008 recorded expenses for this MWC was $3.5 million. The 2006-2008 3-year

[77] Ex. PG&E-3, p. 18-18.

[78] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

average was $3.2 million. Table 7-8 below shows a summary of PG&E's spending for years 2004-2008.

**Table 7-8**

**MWC FG—Operate Gas System**

**(In Thousands of Nominal Dollars)**

| | | | Recorded | | Forecast |
|---|---|---|---|---|---|
| 2004 | 2005 | 2006 | 2007 | 2008 | 2011 |
| $2,669 | $2,680 | $3,001 | $3,180 | $3,474 | $3,944 |

## E. MWC FH – Preventative Maintenance

MWC FH tracks costs for preventive maintenance of gas distribution assets for the following categories: (1) general, (2) regulator station maintenance, (3) miscellaneous maintenance on mains, (4) miscellaneous maintenance on services, (5) distribution valve maintenance, (6) service valve replacement, (7) atmospheric corrosion, (8) non-recurring projects, and (9) DIMP Preventive maintenance.

PG&E forecasts $33.8 million for MWC FH in 2011. This is an increase of $17.2 million above the recorded 2008 level. The 2011 request is about four times the average of $8.5 million for 2004-2007.

DRA takes issue with PG&E's 2011 request and presents its analyses and recommendations for each work category below. DRA recommends $15.7 million for MWC FH. This amount is $18.1 million lower than PG&E's forecast. Table 7-9 below provides a comparison of PG&E's and DRA's 2011 forecasts for each of the 6 categories tracked by MWC FH.

**Table 7-9**

**A Comparison of PG&E's and DRA's 2011 Forecasts for MWC FH**

**(In Thousands of Nominal Dollars)**

| | PG&E's 2011 Forecast | DRA's 2011 Forecast |
|---|---|---|
| General | $1,144 | $1,144 |
| Regulator Station Maint. | $5,769 | $4,800 |
| Misc. Maint. Of Mains | $1,156 | $191 |
| Misc. Maint. Of Services | $1,767 | $1,767 |
| Dist. Valve Maint. | $1,941 | $1,300 |
| Service Valve Rep. | $2,211 | $2,211 |
| Atmospheric Corrosion | $1,636 | $507 |
| Non-Recurring Projects | $1,300 | $70 |
| DIMP Preventive Maint. | $16,923 | $4,710 |
| **MWC FH TOTAL** | **$33,847** | **$16,700** |

### 1. General

PG&E requests $1.1 million in expenses for general activities in MWC FH for the Company's Plastic materials Committee, gas distribution material and instrument testing by the Company's Technical and Ecological Services Department, the non-lobbying portion of Gas Distribution's share of AGA dues, and other special projects relating to preventive maintenance. The PG&E 2011 forecast compares closely with the recent 2006-2008 recorded expenses, and DRA does not take issue with it.

### 2. Regulator Station Maintenance

According to PG&E, pipeline safety regulations require annual inspection and maintenance of all district regulator stations. Regulator stations are used to reduce the pressure of the gas entering the distribution system from transmission pipelines to accommodate the lower pressures used in the distribution network.[79]

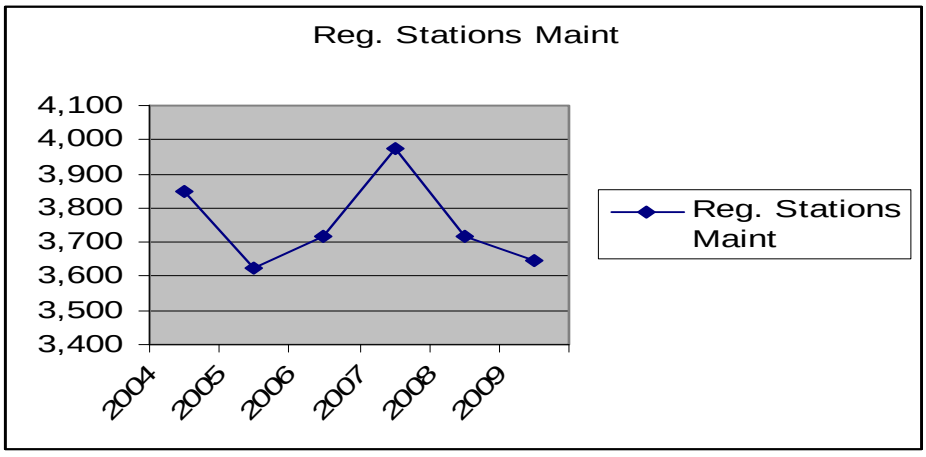
[79] Ex. PG&E-3, p. 18-23.

PG&E requests $5.8 million for regulator station maintenance for 2011. This amount is an increase of $1.6 million compared to the base year. However, the 2011 forecast more than doubles the 2004-2007 4-year average expenses, $2.7 million, for regulator station maintenance.

PG&E's 2011 forecast is based on an increase in the number of units and the unit cost compared to 2008 levels. PG&E's rationale for the increase in the number of units is 1.3% annual system growth over the 2008-2010 time frame. PG&E's justification for the higher unit cost is "...the result of more time to perform housekeeping (painting, water discharging) and completing documentation during each inspection as directed by the refresher training."[80]

DRA disputes PG&E's claim that the number of units will increase due to annual system growth. Since PG&E's data shows that there is system growth every year, as discussed and noted above, there should be a steady annual increase in the number of regulator stations maintained each year. However, this is not the case. PG&E's record shows that the level of regulator stations maintained fluctuates from year to year. See figure 7-1 below for the annual regulator station runs maintained.

**Figure 7-1**
**2004-2009 Recorded Runs Maintained**




Source: 2004-2008 from PG&E-3, WP-18-16, 2009 from PG&E's response to DRA-187, Q.5.

[80] Ex. PG&E-3, p. 18-24.

Based on the data of historical runs maintained by PG&E in recent years, DRA is not confident that the units of work will increase steadily from 2008 to 2011. As can be seen from the graph above, the 2009 level of work shows a decline compared to the 2008 level.

DRA also disputes PG&E's forecast for the 2011 unit cost. PG&E has not provided adequate support for the derivation of the 2011 unit cost. Based on PG&E's workpapers, the increase in 2011 above the 2010 unit cost is due to 3.75% labor escalation.[81] However, PG&E could not explain how the 2010 unit cost is estimated at 50.2% above the 2009 unit cost,[82] which is the basis for the 2010 and 2011 unit costs.

Since PG&E could not adequately substantiate the increase in units and unit cost for regulator stations maintenance. DRA recommends using the 2009 recorded units and unit cost as the basis for 2011. The 2009 recorded data incorporates PG&E's most recent changes to the work procedures for performing maintenance, based on Utility Work Procedure 4540-01, which was made effective in August 2009.[83] In 2009, PG&E spent $4.8 million and completed 3,644 units.[84]

DRA recommendation of $4.8 million is $1 million lower than PG&E's forecast of $5.8 million for regulator station maintenance for 2011.

### 3. Miscellaneous Maintenance of Mains

PG&E requests $1.2 million in 2011 to perform non-leak related maintenance on mains, such as painting or recoating main and services; repairing pipe supports for above ground main; lowering shallow main and services; and restoring cover

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[81] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-29.

[82] PG&E's response to DRA-211, Q.1.

[83] PG&E's response to DRA-211, Q.3.

[84] PG&E's response to DRA-187, Q.5.

over them.[85] PG&E's 2011 request is $600,000 less than the 2008 recorded expenses for this work category. However, compared to the 2004-2007 4-year average of $510,000, PG&E's 2011 forecast represents a marked increase and more than doubles this amount.

PG&E's 2011 forecast of units is based on the 2006-2008 average plus annual system growth at 1.3%. According to PG&E, the 2008 recorded units of work shows an unusually low number, at only 1,661 units, compared to 14,091 units in 2007 and 13,038 in 2006.[86] PG&E claims that the 2008 level of work "...may have occurred due to unit reporting error,"[87] and opted to average the 2006-2008 recorded expenses, adding on system growth estimates for the test year.

DRA disputes PG&E's system growth argument here for this miscellaneous maintenance of mains. Since PG&E's data shows that there is system growth every year, as discussed and noted above, there should be a steady annual increase in the number of miscellaneous maintenance of mains each year. However, this is not the case. Although there was an increase between 2004 and 2007, in 2008, PG&E's record shows a major decrease in the units of work performed, regardless of PG&E's rationale. In 2009, PG&E's record shows a continued decrease of feet of main maintained. PG&E only performed maintenance on 1,649 feet of main in 2009. This is significantly lower than the 2009 forecast of 9,721 feet of main. See Figure 7- 2 below for the historical maintenance rate between 2004 and 2009.

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[85] Ex. PG&E-3, p. 18-24.

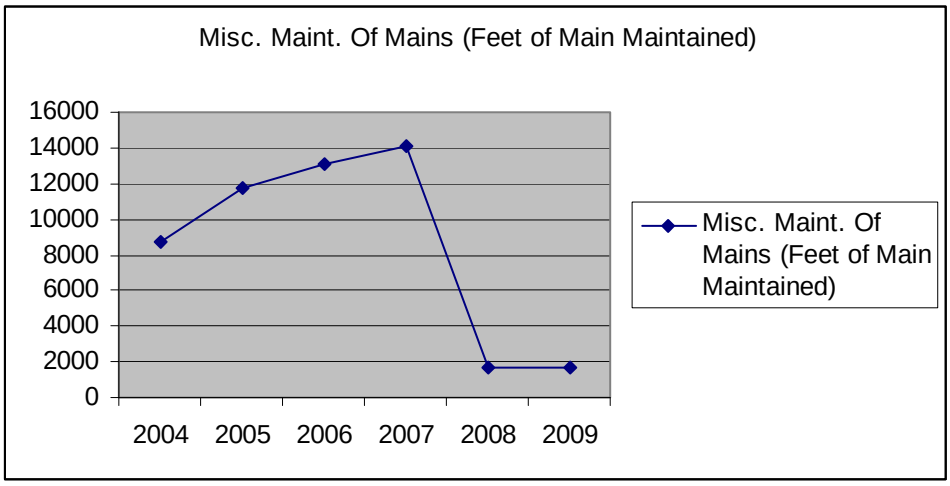
[86] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

[87] Ex. PG&E-3, p. 18-24.

**Figure 7-2**

**PG&E Miscellaneous Maintenance of Mains**

Recorded 2004-2009 Feet of Main Maintained




Source: 2004-2008 from PG&E-3, WP-18-16, 2009 from PG&E's response to DRA-187, Q.5.

DRA is not confident in PG&E's forecast to perform maintenance on 9,975 feet of main in 2011. Based on PG&E's recent work level and PG&E's inadequate justification for additional units of work, DRA recommends using the 2009 unit of work as the 2011 forecast.

DRA does not take issue with PG&E's unit cost forecast of $115.90 per foot.

DRA's recommendation is $191,119 compared to PG&E's request for $1.2 million. DRA's recommendation is $1 million lower than PG&E's forecast.

### 4. Miscellaneous Maintenance of Services

DRA takes no issue with PG&E's request of $1.8 million for 2011. The 2008 recorded expenses for this work category is $1.7 million and the 2004-2007 4-year average is $1.5 million.

### 5. Distribution Valve Maintenance

PG&E requests $1.9 million to perform maintenance work on distribution valves. PG&E states, “Pipeline safety regulations require operators to maintain valves that may be needed for the safe operation of the distribution system....valves that are needed for safe operation are maintained annually.”[88] PG&E’s request is $700,000 higher than the 2008 recorded expenses. However, compared to the 2004-2007 recorded spending, the 2011 forecast is $1 million higher.

PG&E’s rationale for the increase in distribution valves maintained is based on annual 1.3% system growth. PG&E’s reason for the increase in unit cost is for annual labor escalation of 3.75% and for additional time to perform maintenance on certain valves based on updated Company work procedures.[89]

PG&E states that, “the 2011 unit cost will be higher because PG&E needs additional time to lube plug valves during annual valve maintenance. Some operating personnel in 2008 only lubed plug valves when they were difficult to operate. The company has decided to annually lube plug valves as a preventive measure.”[90] PG&E estimates the 2011 unit cost will be $255.09 per valve to meet the requirements of this new work requirement.[91]

DRA disputes PG&E’s claim that the number of units will increase due to system growth. Again, PG&E’s record for the number of distribution valves maintained fluctuates up and down between 2004 and 2009. There has been no steady increase during this time frame, although there has been an average of 1.3% system growth. Figure 7-3 below shows the fluctuations for this work category.

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[88] Ex. PG&E-3, p. 18-25.

[89] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-29.

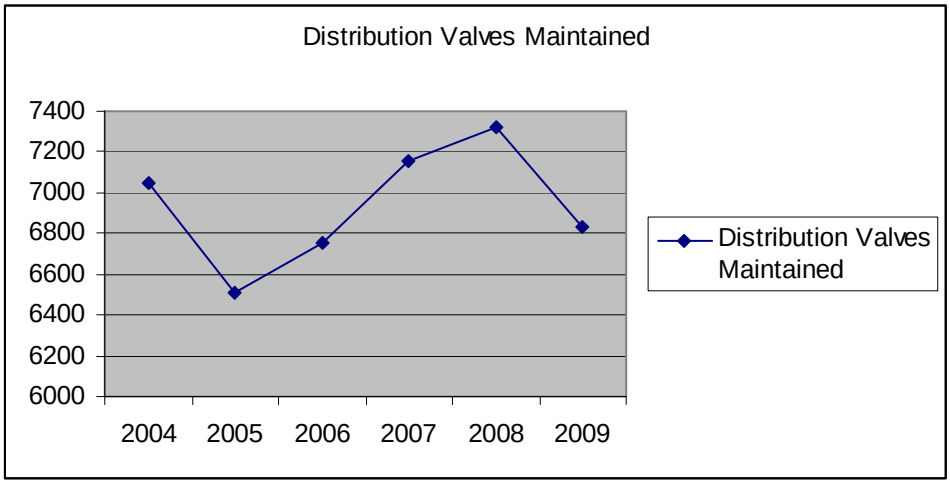
[90] Ex. PG&E-3, p. 18-25.

[91] Ibid.

**Figure 7-3**

**PG&E Distribution Valves Maintenance**

**Recorded 2004-2009 Distribution Valves maintained**




Source: 2004-2008 from PG&E-3, WP-18-16, 2009 from PG&E's response to DRA-187, Q.5.

DRA also disputes PG&E's justification for the increase in unit cost in 2011 due to a change in its work procedures. PG&E's Utility Work Procedure WP 4430-04 "Gas Valve Maintenance Requirements and Procedures," which contains the new lube requirement, became effective on March 2009. This is a work procedure that was already in place in 2009. PG&E's proposed unit cost increase is unjustified.

Since PG&E has provided inadequate support for the 2011 forecast for distribution valve maintenance, DRA recommends using the 2009 recorded units or work and unit cost as the 2011 forecast. The 2009 units of work show the most recent work level while the 2009 unit cost captures the recent change in the work procedures for distribution valve maintenance.

DRA's 2011 recommendation is $1.3 million, which is $600,000 lower than PG&E's request of $1.9 million.

### 6. Service Valve Replacement

PG&E requests $2.2 million to replace 9,796 service valves in 2011. PG&E replaces service line shut off valves when they are found to be broken, inoperative or leaking through the core.[92]

PG&E states that as a result of more effective leak detection techniques, more leaking service valves are being identified. In 2009, PG&E replaced almost twice the number of valves compared to the Company 2009 forecast and spent $2.6 million. DRA does not take issue with PG&E's 2011 forecast of $2.2 million.

### 7. Atmospheric Corrosion Inspections/Repairs

PG&E requests $1.6 million to inspect 3,837 inspections of exposed gas distribution facilities. This request is $1.4 million higher than the 2008 recorded spending of $255,236. PG&E's rationale for the increase is based on an increase of 3,000 units of work, beginning in 2009, that have not previously been included.

The additional units of work in PG&E's 2011 forecast are High Pressure Regulators (HPRs), or customer metering regulators, which reduce pressure from transmission pipelines to either one or two services.[93] Based on inspections performed as part of GEEM work, PG&E is now focused on a comprehensive inventory of all HPRs, which will then be added to the atmospheric corrosion inspection program.[94] PG&E states in testimony that beginning in 2009, HPRs will be added to the inspection list for ACs.[95]

DRA disputes PG&E's inclusion of 3,000 HPRs in its 2011 forecast. DRA finds that PG&E has not provided justification for this number. PG&E is currently taking inventory of its system and does not yet know how many HPRs will need to

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[92] Ex. PG&E-3, pp. 18-25 and 18-26.

[93] Ex. PG&E-3, p. 18-26.

[94] PG&E's response to DRA-28, Q.9.

[95] Ex. PG&E-3, p. 18-26.

be inspected.[96] PG&E has been ambitious in its forecast by including HPRs in the 2009 and future forecast. PG&E forecasts 1,657 additional inspections above the 2008 level of 158 inspections. In reality, PG&E only inspected 629 locations in 2009 and none of these were HPRs.[97]

PG&E could not provide any historical data on HPR inspections performed in the past. PG&E states, "The precise number, location or time of inspection of these HPRs (HPRs identified in 2004) is unavailable at the program management level."[98] This response does not show how many, if any, HPR were inspected in the past or at what rate. Accordingly, there is no historical data on which to base a reasonable future HPR forecast.

Also, PG&E has provided no evidence to show that it must inspect 3,000 HPRs in one year, or that this number is a reasonable forecast for the test year.

Since PG&E does not have adequate support for the increase level of inspections by including the 3,000 HPRs in the test year, DRA recommends using the 2009 recorded expenses, $507,381, as the 2011 forecast. This amount shows the most recent level of spending for atmospheric inspection and appears to be a reasonable amount compared to historical spending.

DRA's recommendation of $507,381 in the test year, is $1.1 million lower than PG&E's forecast of $1.6 million.

### 8. Non-Recurring Projects

PG&E requests $1.3 million for non-recurring projects. According to PG&E, these are projects that PG&E"...identifies, prioritizes and performs a large number of one-time, and non-recurring."[99] In 2008, PG&E spent $351,034 on one-time, non-recurring projects. For 2011, PG&E forecasts a fourfold increase, "...based on

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[96] PG&E's response to DRA-28, Q. 8.

[97] PG&E's responses to DRA-187, Q.5 and DRA 28, Q.8.

[98] PG&E's response to DRA-28, Q.9.

[99] Ex. PG&E-3, p. 18-27.

identified work that is currently deferred, but will need to be performed in a few years as equipment further degrades."[100] However, PG&E's workpapers not only fail to show any support for the requested increase, they support a decrease.

DRA asked PG&E to provide a listing of the "identified work that is currently deferred," and the reason(s) why the work was deferred. PG&E provided a listing that shows approximately $70,000 in projects that were deferred.[101] PG&E stated in this response that the reason for the deferment was because they were lower priority than other projects. PG&E did not substantiate the $1.3 million in the forecast.

Based on the lack of information and inadequate support from PG&E, DRA finds PG&E's 2011 forecast unsupported. Since PG&E was able to identify $70,000 of the $1.3 million, in non-recurrent projects for 2011, DRA recommends that this be the forecast.

DRA's recommendation is $70,000 for 2011 and is $1.2 million lower than PG&E's forecast of $1.3 million.

### 9. DIMP Preventive Maintenance

PG&E is seeking $16.9 million for DIMP activities captured by MWC FH . According to PG&E, the forecast is for preventive maintenance work to comply with DIMP in 2011 and includes the following: (1) Program Management and Continued Development of DIMP, (2) Cross-Bored Sewer Project, (3) Marker Ball Installation on Unlocateable Infrastructure; (4) Aldyl-A; (5) Develop Human Performance Program; (5a) Enhanced OQ Program: (5b) Improved Training for Maintenance Tasks; (5c) Quality Control Program; (5d) Enhanced QC/QA Program; (6) Service

[100] Id.

[101] PG&E's response to DRA-27, Q. 1.

Valve Repairs/Replacements.[102] DRA recommends $4.7 million for 2011. Table 7-10 below provides a comparison of PG&E's and DRA's 2011 forecast.

**Table 7-10**

**MWC FH—DIMP Preventive Maintenance**

**(In Thousands of Nominal Dollars)**

| | PG&E's 2011 Forecast | DRA's 2011 Forecast |
|---|---|---|
| Program Mgmt and Cont. Dev. Of DIMP | $2,880 | $648[103] |
| Cross-Bored Sewer Project | $3,200 | $1,000 |
| Marker Ball Installation on Unlocateable Infrastructure | $1,052 | $367 |
| Aldyl-A | $2,125 | $500 |
| Dev. Human Performance | $1,162 | $1,162 |
| Enhanced Operator Qualification Program | $1,715 | $430 |
| Improved Training for Maint. Tasks | $1,130 | $0 |
| Quality Control Program | $400 | $0 |
| Enhanced Quality Control/Quality Assurance Program | $2,327 | $0 |
| Service Valve Repairs/Replacements | $933 | $599 |
| MWC FH-DIMP Preventive Maint. TOTAL | $16,923 | $4,706 |

### a. Program Management and Continued Development of DIMP

PG&E forecasts $2.9 million for Program Management and Continued Development of DIMP. PG&E states, "The program management component, is approximately 9% of the total DIMP cost forecast."[104] PG&E simply added up the

[102] Ex. PG&E-3, p. 17-9. PG&E's discussion of DIMP requirements and necessary O&M related work activities is presented separately in Exhibit PG&E-3, Chapter 17.

[103] This number is 6% of the total DIMP costs for MWCs DE, FH, FI, and DF=(6%)($4,270+$4,058+$2,200, +267)

[104] PG&E-3, p. 17-10.

individual DIMP forecasts for 2011, which total $33.6 million and applied 8.6% to the sum, to get the $2.9 million. PG&E claims that the program management component is consistent with historical project and program management for large, complex undertakings.[105] DRA asked PG&E how the Company determined the 9%, PG&E responded that it was based on PG&E's judgment based on experience in the industry and is confirmed in Project Management Literature. The Project Management Literature PG&E cited is "The Power of Enterprise-Wide Project Management"[106] and "Quantifying The Value of Project Management".[107] No support was provided to show how this estimate is consistent with historical project and program management, as PG&E claims in testimony.

DRA takes issue with PG&E's 2011 forecast of $2.9 million. PG&E has not adequately justified the use of 9% of the total project cost to determine the project management cost. The Power of Enterprise-Wide Project Management shows that the management cost of a project can range between 6% and 12%: "the quantitative Berkeley study, along with data from other project management literature, indicates that the cost of project management ranges between 6 percent and 12 percent of the total cost of the project, depending on the project size and complexity."[108] PG&E's other source reports a lower percentage than PG&E is using in its forecast: "High maturity companies have project management costs in the 6-7 percent range..."[109]

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[105] Exhibit PG&E-3, p. 17-10.

[106] Bolles, Dennis L. and Darrel G. Hubbard, The Power of Enterprise-Wide Project Management, American Management Association, 2007.

[107] Ibbs, William and Justin Reginato, Quantifying the Value of Project Management, Project Management Institute Inc.,2002.

[108] Bolles Hubbard, p. 285.

[109] Ibbs and Justin Reginato, 2002, p. 2. The "maturity" concept stated herein refers to company practices.

Since PG&E has extensive experience managing its operations, and more recently, the Company has had to manage a very similar project on the transmission side, the Transmission Integrity Management Program (TIMP), DRA expects the management cost to be closer to the lower range of the estimates, and not 9%.

DRA requested that PG&E provide data regarding the management cost of TIMP so that it can determine if the DIMP management cost forecast is reasonable.[110] PG&E has been managing TIMP since 2003. DRA believes that TIMP management costs would provide some basis for evaluating the reasonableness of a similar program such as DIMP. According to PG&E, the two programs have similar characteristics. PG&E states, "...the basic elements of integrity and risk assessments and mitigation program development and implementation...are the same for the two regulations."[111]

Although DRA repeatedly asked for this information, PG&E has not provided the program management cost element for TIMP.

PG&E has not adequately justified 9% as the percentage of program management costs and recommends using 6% instead. Since DRA's total forecast for DIMP projects is $10.8 million,[112] applying 6% to this total yields $648,000 as the program management cost.

DRA's recommendation is $652,000 for DIMP program management cost. This amount is $2.2 million lower than PG&E's forecast of $2.9 million.

**b. Cross-Bored Sewer Project**

PG&E requests $3.2 million for the Cross-Bored Sewer Project. According to PG&E, the purpose of this project is to evaluate the risk of natural gas migrating inside the sewer system should a leak occur, or should the natural gas pipe be cut

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[110] DRA-64. Q.3(d).

[111] Ex. PG&E-3, p.17-5.

[112] $10,800=$4.1 million (FH) + $4.3 million (DE) + 267 (DF) +$2.2 million (FI)

by equipment during sewer line maintenance operations.[113] PG&E estimates that it will need "... 1 FTE of staff time to provide technical analysis of data, industry best practices review and direction for a construction work force of approximately 12 FTEs engaged in the search for and repairs of gas/sewer conflicts."[114]

DRA takes issue with PG&E's 2011 forecast. DRA finds that PG&E has not provided adequate support to show how it determined that it will need 13 FTEs for this project in 2011. First, PG&E has provided inconsistent support for the FTE forecast. In PG&E's testimony, the Company requests 13 FTEs for this project. However, its response to DRA data request shows 14 FTEs.[115]

Second, while PG&E claims that this is a known risk,[116] PG&E has not performed any evaluation of the risk that this problem poses.[117] PG&E states that prior to 2009, "PG&E contractors, using directional drilling tools, may have inadvertently bored through a sewer line with a gas line. [However] PG&E has not identified specific dates of these events and does not yet have information about possible frequencies."[118] There has also been no associated construction work for the search and repairs of gas/sewer conflicts.[119] There is no explanation as to how PG&E determined the number of FTEs for this Project.

DRA further questions PG&E's ability to accurately gauge the magnitude of this problem. If PG&E has not evaluated, nor prioritized the risk of gas migrating inside the sewer system, then PG&E does not know how much of its infrastructure is

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[113] Ex. PG&E-3, p. 17-10.

[114] Ex. PG&E-3, pp. 17-10 to 17-11.

[115] PG&E's response to DEF-19-DAO, Q.4.

[116] PG&E-3, Workpapers Supporting Chapter 17, p. WP 17-4.

[117] PG&E's response to DRA-64, Q. 5.

[118] Ibid.

[119] Ibid.

impacted, or how often. DRA questions PG&E's ability to determine the level of mitigation/correction work necessary, as PG&E has put forth in its DIMP request, if these factors are not known. DRA thus concludes that PG&E has not justified the level of funding for this project.

Although PG&E's 2011 forecast for the cross-bored sewer project is unjustified, DRA recognizes that PG&E must begin performing some work to mitigate this risk in order to be in compliance with DIMP regulations. As such, DRA recommends that PG&E normalize this forecast over the 3-year period of the GRC and recommends $1 million per year.

DRA finds that $1 million in 2011 is adequate to cover the costs for PG&E to begin working on the Cross-Bored project. Since DIMP will be a part of PG&E's work going forward, PG&E should begin tracking the level of work associated with this DIMP activity so that in future GRCs there will be some basis to evaluate future work projects associated with DIMP.

DRA's recommendation of $1 million is $2.2 million less than PG&E's forecast of $3.2 million.

### c. Marker Ball Installation Project

PG&E requests $1.1 million for the Marker Ball Installation on Unlocateable Infrastructure Project. PG&E's forecast is to use electro-magnetic sensors to locate otherwise unlocateable facilities such as buried plastic pipe. The $1.1 million is the sum of the costs to hire 4 FTEs, at a unit cost of $213,000.[120] PG&E simply states it will install marker balls at 1000 locations at a unit cost of $1,050 per location.[121]

DRA finds that PG&E has not shown how this level of work or how this level of expenses were determined. DRA asked if PG&E performed this work activity in any previous year and PG&E stated that it had not.[122] As PG&E has not used this

[120] Ex. PG&E-3, p. 17-11.

[121] PG&E's response to DEF-19, Q.7.

[122] PG&E's response to DRA-64, Q. 6.

technology before, and has not provided any support for how it determined the 1000 locations necessary for 2011, then DRA questions how PG&E was able to determine the cost to perform this work activity.

PG&E has not made a convincing showing that it needs to install marker balls at 1000 locations in 1 year. PG&E's estimate is overly ambitious especially since recent spending levels show that the company only spent a fraction of the 2009 forecast. According to PG&E, the Company only spent $47,000 in 2009 on this work activity even though it had forecasted $500,000.[123]

Since PG&E did not explain how the 1,000 locations were determined or the level of FTEs necessary, DRA finds that the funding for this request unsupported. Although there are no risk analysis performed to determine the level of mitigation/correction necessary, DRA is cognizant of the requirements of DIMP and understands that PG&E must begin to address this risk. Therefore, DRA recommends that PG&E normalize its expenses over a 3 year period.

DRA's recommendation is for $367,000 in 2011. DRA's recommendation is $730,000 lower than PG&E's request.

### d. Aldyl-A Project

PG&E requests $2.1 million in 2011 for investigation and risk assessment associated with Aldyl-A pipe across its service territory.

According to its testimony, PG&E has approximately 7,000 miles of Aldyl-A plastic distribution system pipe in service.[124] PG&E claims that Aldyl-A plastic pipe can become brittle, especially when exposed to high soil temperatures, which may limit service life. However, before the risk assessment can be performed, PG&E has to collect samples of the various types of Aldyl-A pipe used in the system so that an analysis of the rate of embrittlement on those samples could be done. In testimony, PG&E states that it will be collecting samples in the 2009 and 2010 time frame and

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[123] PG&E's response to DRA-162, Q.2. Att.1.

[124] Ex.PG&E-3, p. 17-11.

forecasts approximately $1.5 million for the effort, with $1 million estimated for 2009 and $500,000 for 2010.[125] PG&E states that the forecast for Aldyl-A, FTEs were based on estimates of the number of FTEs and direct cost estimates were based on engineering judgment.[126]

DRA is not confident in PG&E's forecast of necessary work for Aldyl-A. PG&E claims that it needs 0.5 FTE for staff oversight, 7.2 FTEs for construction for an entire year, and $500,000 in material costs associated with construction.[127] However, PG&E has not collected any samples, nor has it investigated or analyzed any of the risk presented by Aldyl-A. According to PG&E's response on November 25, 2009, to a DRA data request regarding Aldyl-A, PG&E states, "No actual samples were collected and there are no results as yet."[128]

DRA requested that PG&E provide support and justification for the 2011 forecast, but PG&E simply identified number of FTEs estimated and the cost per unit as the annual forecast.[129] There are no justifications of how the level of work was determined.

Also, it appears that PG&E's goals for Aldyl-A work for 2011 are inconsistent. DRA cannot assess what PG&E is planning to do in 2011, let alone the level of work intended. In the testimony, PG&E states that it will assess the risk presented by Aldyl-A in 2011 after the collection and analysis of the samples collected have been performed in 2009 and 2010.[130] In its workpapers, however, the 2010 and 2011 forecast simply states, "increase in Aldyl-A project to mitigate a known risk in

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[125] Ibid. Also, Table 17-1 on page 17-9 shows the expenses forecast for 2009-2010.

[126] PG&E's response to DEF-DAO-19, Q.9.

[127] Ex. PG&E-3, p. 17-12.

[128] PG&E's response to DRA-64, Q.7.

[129] PG&E's response to DEF-19, Q.9.

[130] Ex. PG&E-3, pp. 17-11, 17-12

compliance with the DIMP rule."[131] Then, in a response to a DRA deficiency notice to show the derivation of the estimates, PG&E states, "7 FTEs for one in series of program years to replace pipe. Program established from data gather in prior years."[132] So, for the 2011 forecast, the testimony states PG&E will perform risk assessments, the workpapers state that PG&E will mitigate the risk, and the response to the deficiency states that PG&E will replace Aldyl-A pipe. The testimony, workpapers, and response to DRA's data request appear to show separate action plans, in different stages of planning, for this project in 2011.

Moreover, it appears that PG&E has been too optimistic with its forecast. In 2009, PG&E only spent $287,000 for work associated with Aldyl-A.[133] PG&E's original 2009 forecast is for $1 million.

DRA recommends $500,000 for 2011 so that PG&E can begin to collect samples of Aldyl-A pipe and assess the risk associated with this type of pipe. DRA's recommendation allows for PG&E to begin the first steps at understanding how Aldyl-A ages so that PG&E can begin to manage possible risks. It does not look like PG&E has identified the risks posed by this type of pipeline system at this time, and it would be premature for PG&E to begin mitigating the risks of Aldyl-A pipeline or to replace Aldyl-A pipeline.

DRA's recommendation of $500,000 is $1.6 million lower than PG&E's forecast of $2.1 million for 2011.

### e. Develop Human Performance Program

#### *i. Enhanced OQ Program*

For Enhanced OQ Program, which guards against failures caused by human error, PG&E requests $1.7 million in 2011, to "enhance the existing program by centralizing the ownership of the program into the training organization to

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[131] Ex. PG&E-3, Workpapers Supporting Chapter 17, pp. WP 17-3 and 17-4.

[132] PG&E's response to DEF-19, Q.9.

[133] PG&E's response to DRA-162, Q.2, Att. 1.

compliance and effectiveness, ensure consistency and alignment with the Companies [sic] existing training function."[134] PG&E states that this initiative is designed to qualify and train personnel performing DOT-mandated compliance work and providing supervision to a high level of competency. PG&E further states, "the forecast is based on having 4 FTEs of staff time and 4 FTEs of crew participation."[135]

DRA asked PG&E for the rationale for 8 FTEs and to show how the $1.7 million was derived. PG&E responded that the FTEs were "...based on estimates…" and the costs were based on using "engineering judgment".[136] No program scope was provided.[137]

DRA concludes that PG&E lacks justification and basis for the $1.7 million. PG&E has not demonstrated why "centralization into training organization" has to be done in 1 year and in 2011, nor why PG&E must be given additional resources to guard against failures caused by human error without any discussion of the scope of PG&E's problem with human error. However, since DRA is cognizant of DIMP regulations and recognizes that PG&E must begin this work to guard against human error, DRA recommends "centralizing" PG&E's existing human error oversight program into 1 FTE of staff time and 1 FTE of crew participation for 2001, pending further analysis of the human error oversight program. If PG&E's human error performance during this rate case cycle is poor, this staffing level can be reevaluated in the next rate case cycle.

DRA's recommendation is $430,000 for 2011. This recommendation is $1.1 million lower than PG&E's forecast.

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[134] Ex.PG&E-3, pp. 17-13, 17-14.

[135] Ibid., pp. 17-13 to 17-14.

[136] PG&E's response to DEF-19, Q.11.

[137] PG&E's response to DRA-163, Q.1.

***ii. Improved Training for Non OQ Related Tasks***

For Improved Training for Non OQ Related Tasks, PG&E requests $1.1 million. PG&E states, "Technological and work practice improvements require re-training and re-qualifying employees to ensure that they consistently use current techniques."[138]

When asked to show how PG&E determined this estimate, PG&E stated that the FTEs were "...based on estimates…" and the costs were based on using "engineering judgment".[139] PG&E claims that the forecast is based on 1,122 days of training time for crew members but does not have support for how this number was determined. PG&E has not identified the "crew members" that need to be trained, the areas or subjects they will be trained on, or the specific reasons why they need to be trained. PG&E has not identified nor provided any training materials that will be used in the training. Also, PG&E has not shown why these trainings or this level of training—the 1,122 days, are required to be completed in one year, or for the test year in particular.

DRA finds that PG&E's forecast unconvincing and unsupported. PG&E receives on-going funding through its general rate case proceedings for training its employees. Technological and work practice improvements are not only happening in the test year, 2011. Work practice improvements are continuous. For example, in 2008 with GEEM, PG&E has had to re-train employees to perform leak surveys as a result of improvements made to the leak survey process. Training funding is embedded in the day-to-day operations of T&D.

DRA finds PG&E's forecast for Improved Training for Non OQ Related Tasks unjustified and recommends zero funding. DRA's recommendation is $1.1 million lower than PG&E's forecast of $1.1 million.

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[138] Ex. PG&E-3, p. 17-14.

[139] PG&E's response to DEF-19, Q.13.

### *iii. Quality Control Program Management*

PG&E requests $400,000 for Quality Control Program Management. PG&E's request is $10,000 for software and 1.8 FTE for staff analysis, development, and administration of the program.

DRA asked PG&E to show how the $400,000 was determined. Again, PG&E stated that the FTEs were "...based on estimates…" and the costs were based on using "engineering judgment".[140] PG&E did not describe what this program is about.[141] Although PG&E provided calculations to show how the $400,000 was derived, DRA notes that the calculations provided do not add up.

DRA recommends zero funding for this request because PG&E's forecast has no basis, and is unsupported. DRA's recommendation is $400,000 lower than PG&E's request.

### *iv. Enhanced Quality Assurance Program*

For Enhanced Quality Assurance Program, PG&E requests $2.3 million to enhance its quality control program.[142] PG&E states the enhancement will focus on the requirements for general controls, supervision, inspections and tests to achieve acceptable quality for all gas programs, assessments of performance relative to desired results, and assessments of opportunities for improvement to PG&E's DIMP.[143]

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[140] PG&E's response to DEF-19, Q.15.

[141] Ibid. PG&E's calculations are as follows: "5 man days per quarter * 8 hours per man day*$120 per hour*4 quarters*18 divisions =$345,000...1.8 FTE...PG&E included $27, 000 of unidentified cost from 2008 in the 2011 forecast as well. PG&E added $46,000 to get to the forecast, but the adjustments don't add up. The 1.8 FTE at $213,000 per FTE + $10,000 for software do not add up to $46,000. These numbers add up to $393,000.

[142] Ex. PG&E-3, Page 17-15.

[143] Ex. PG&E-3, p. 17-15.

DRA asked for a copy of the program scope, but none was provided.[144] It appears that PG&E replicated the exact language from its testimony to respond to this question.[145] DRA asked PG&E to explain in detail the annual work activities and annual costs for this program.[146] PG&E did not provide any details of any work activities specific to this program for the forecast. PG&E provided a table which identifies 11 FTEs for staff analysis along with very vague descriptions of what needs to be done. For example, next to PG&E's forecast for 1.1 FTE, the description reads, "Program Development." Or, PG&E claims 0.3 FTEs for "industry best practice benchmarking".[147] DRA is not able to ascertain the kind of specific work activities that need to be monitored or enhanced for quality control.

In this response, PG&E also states the forecast was based on estimates of the number of FTEs needed, and the cost estimates were based on engineering judgment.

DRA concludes that PG&E's forecast unsupported and without any basis. DRA questions PG&E's justification for this project since the description of what PG&E plans to do is vague. DRA recommends zero funding for this request. DRA's recommendation is $2.3 million lower than PG&E's request.

### f. Service Valve Repairs/Replacements

PG&E forecasts $933,000 to repair/replace additional service valves due to the change in leak survey frequency from 5 years to 3 years. PG&E's forecast is based on 0.48 valve leaks per mile of survey multiplied by the total incremental DIMP miles forecast for 2011 of 8,595 miles. This yields an incremental service

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[144] PG&E's response to DRA-163, Q.2.

[145] PG&E's response to DRA-163, Q.2., See testimony from Exhibit PG&E-3, pp. 17-15 to 17-16.

[146] Ibid.

[147] Ibid.

valve total of 4,132 units of work. As for unit cost, PG&E uses the same 2011 unit cost as the service valve repair/replacement work for the day-to-day O&M activities, as discussed earlier above.

DRA does not take issue with PG&E's forecast of the rate of leaks per mile or the unit cost. As stated above, DRA does not take issue with the O&M service valve repair/replacement forecast. However, DRA disputes the number of additional miles estimated as a result of the leak survey schedule change from a 5-year schedule to a 3-year schedule. As discussed above, DRA forecasts an additional 5,532 miles and not 8,595 miles as PG&E estimates, in order to transition to the 3-year schedule. DRA's calculation yields an additional 2,656 units or work. Using PG&E's 2011 unit cost forecast of $225.72 per service valve, DRA's recommendation is $599,000 for 2011. DRA's recommendation is $334,000 lower than PG&E's request of $933,000.

### F. MWC FI – Corrective Maintenance

MWC FI tracks expenses associated with (1) main leak repair, (2) service leak repair, (3) main dig-in repair, (4) service dig-in repair, (5) Cathodic Protection restoration, (6) regulator station repair, (7) valve repair, and (8) DIMP corrective maintenance.

For 2011, PG&E requests a total of $48.5 million for MWC FI. In 2008, PG&E spent $34.9 million to repair and replaced damaged facilities; however, $6 million of that total was for one time, non-recurrent GEEM related work activities. The 2004-2007 average expenses for this MWC is $14.6 million.[148]

The main increases in 2011 above the 2008 base year level are attributable to DIMP work. PG&E forecasts $12.9 million for DIMP corrective work tracked by MWC FI.

DRA recommends a total of $15.7 million for MWC FI. This amount is $32.8 million lower than PG&E's forecast. Table 7-11 below provides a comparison of PG&E's and DRA's 2011 forecasts for MWC FI.

**Table 7-11**
**MWC FI—Corrective Maintenance**
**PG&E's and DRA's 2011 Forecast**
**(In Thousands of Nominal Dollars)**

| | PG&E's 2011 Forecast | DRA's 2011 Forecast |
|---|---|---|
| Main Leak Repair | $9,763 | $3,200 |
| Service Leak Repair | $20,343 | $6,800 |
| Main Dig-In Repair | $255 | ($62) |
| Service Dig-in Repair | $806 | $338 |
| Cathodic Protection Restoration | $2,796 | $2,796 |
| Regulator Station Repair | $1,163 | $1,163 |
| Valve Repair | $690 | $690 |
| DIMP Corrective Maint. | $12,681 | $2,196 |
| **MWC FI TOTAL** | **$48,496** | **$17,121** |

### 1. Main Leak Repair

PG&E forecasts $9.8 million to perform 2,253 main leak repairs at a unit cost of $4,333.13 per repair. According to PG&E, non dig-in leak repairs on main are done based on discoveries by leak surveys, by employees during other maintenance, or from calls by the public.[149]

PG&E's 2011 forecast is based on an estimate of .55 leaks per mile.[150] Also, PG&E claims that the increase is due to the number of Grade 2 leaks (non-

(continued from previous page)

[148] Ex. PG&E-3, WP p. 18-16.

[149] Ex. PG&E-3, p. 18-30.

[150] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-32.

hazardous leaks) found in previous years that, according to PG&E, must be scheduled for repair within 18 months of detection.[151]

DRA takes issue with PG&E's 2011 forecast for main leak repair because PG&E's support for this request is inadequate.

For 2009, PG&E estimates in its workpapers that the Company would experience a leak rate of 0.31 leaks per mile of main surveyed.[152] For 2011, PG&E increases this number to 0.55 leaks per mile of main surveyed without any support or justification.

DRA notes that Grade 2 leak repairs are not a new activity that is only being performed starting with 2011. Grade 2 leak repairs have always had to be done and are part of PG&E's day-to-day maintenance practices. PG&E's claim that these Grade 2 leaks are now driving the increases in the test year is without any basis. According to PG&E, Grade 2 leaks are non-hazardous and can be scheduled for repair within 18 months of detection.[153] PG&E has not offered any testimony or workpapers that support an increase in the number of Grade 2 leaks above and beyond recent historical numbers. Moreover, by 2009 PG&E had already established new and improved leak survey processes and techniques, and training, etc., based on GEEM assessments performed in 2007 and 2008.

Based on a lack of adequate support for the level or main leak repair forecast, DRA recommends using the PG&E 2009 recorded number of miles surveyed under the routine leak survey, 18,076 miles.[154] According to PG&E, of the total number of miles surveyed, 20% of leaks found are on mains and 80% are on services.[155]

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[151] Ex. PG&E-3, p. 18-30.

[152] Ibid.

[153] Ex. PG&E-3, p. 18-30

[154] See, supra, DRA discussion of Routine Leak Surveys above at p.12, for additional reasons regarding why the 2009 number of miles surveyed should be used as the basis for the 2011 forecast.

[155] Ex. PG&E-3, p. 18-31

Based on the 18,076 miles surveyed, 20% of the number of miles surveyed is 3,615 miles. For the 3,615 miles affected, 0.31 leaks per mile, the calculations yield 1,121 main leak repairs.

DRA recommends using PG&E's 2008 recorded unit cost for main leak repairs because PG&E has not provided adequate justification for the increase in unit cost for 2011. PG&E's forecast is not based on the recorded base year. Instead, PG&E's 2011 forecast is built with the 2008 "unit cost target," ($4,624 per repair) which is 60% higher than the 2008 recorded of $2,816 per repair. Also, while PG&E claims that its high unit cost forecast for 2011 "aligns with historical data," PG&E failed to use the actual 2008 unit cost, which would incorporate the most recent costs and any new changes in procedures or work activity PG&E has been performing. The 2008 unit cost should also incorporate the new and improved leak survey process and the number of leaks found.

Based on the lack of support for this request, DRA finds that the 2009 recorded number of miles surveyed and the 2008 unit cost for main leak repairs make a reasonable forecast for 2011.

DRA's recommendation is $3.2 million, which is based on 1,121 main leaks at $2,816 per repair. DRA's recommended level of work for 2011, compares closely with PG&E's 2008 recorded number of leaks repaired, which is 1,422. Compared to PG&E's forecast of $9.8 million, DRA's recommendation is $6.6 million lower.

**2. Service Leak Repair**

PG&E forecasts performing 9,010 leak repairs on services at a unit cost of $2,258 per repair. PG&E's total forecast is $20.3 million for 2011.

DRA disputes PG&E's 2011 forecast and takes issue with the number of repairs and the unit cost for service leak repairs. DRA finds that PG&E has not sufficiently justified the unit cost or the level of work that it plans to do in 2011. As with the unit cost forecast for main leak repairs, PG&E's unit cost forecast for service leak repairs is based on the "2008 unit cost target" of $2,926 per repair. The "target"

is almost twice (90% higher than) the 2008 recorded cost of $1,511 per repair.[156] PG&E also claims that the 2011 unit cost aligns with historical data, but failed to incorporate the most recent recorded year's (2008) cost. DRA finds that the 2008 recorded cost best reflects the cost of performing service leak repairs and should be used to forecast 2011 costs.

Similar to DRA's basis for its main leak repairs forecast discussed above, DRA recommends using the 2009 recorded number of miles surveyed and the 2008 unit cost for service leak repairs for the 2011 forecast. DRA also recommends using the 0.31 leaks per mile forecasted for 2009 because this includes the most current changes in leak survey techniques and processes. This is also appropriate because PG&E has not adequately justified the increase to 0.55 leaks per mile in 2011.

Again, PG&E has not supported its claim that Grade 2 leaks that need to be repaired are being added to 2011 and therefore will increase the number of units that need to be repaired. The corrections of Grade 2 leaks have always been performed as part of the service leak repair activities. This is not a new work category to be added in the test year. Furthermore, PG&E has not demonstrated that Grade 2 leaks have increased above and beyond recent historical numbers. The leaks found and repaired in 2008 and 2009 should incorporate all recent changes to the leak survey processes and techniques since the GEEM assessment was done in the 2007-2008 timeframe.

The 2009 recorded number of miles surveyed, 18,076, and the 2008 unit cost of $1,511 per service leak repair reflect the most recent level of miles that need to be repaired and the most recent repair cost. Since service leaks are found on 80% of the total of miles surveyed, the total number of miles affected is 14,461 miles. At 0.31 leaks per mile, DRA's calculation yields a total of 4,483 service leaks to be repaired in 2011.

DRA's recommendation is for $6.8 million compared to PG&E's request of $20.3 million and is $13.5 million lower than PG&E's 2011 forecast.

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[156] Ex. PG&E-3, Workpapers Supporting Chapter 18, p. WP 18-16.

**3. Main Dig-In Repairs, and**

**4. Service Dig-In Repairs**

PG&E forecasts $254,786 for main and $805,583 for services dig-in repairs. In total, PG&E's forecast is $1.1 million. The repairs for main and service dig-ins are based on third-party dig-ins to PG&E facilities, and are the leading cause for gas leaks on the distribution system. In 2008, the net costs from dig-ins totaled only $275,000 because 93 percent of the dig-in costs were recovered from excavators who damaged PG&E's facilities.[157]

DRA does not take issue with PG&E's forecast that the number of dig-ins will not increase from 2008 to 2011 and that PG&E expects to perform the same volume of repairs as it did in 2008.[158] However, DRA takes issue with the forecast of total costs for main and service dig-in repairs. PG&E forecasts that only 80% of the cost can be expected to be reimbursed by the third-party damaging its facilities. PG&E has not offered any justification for the 80% reimbursement rate. The company simply states in testimony, "...the Company experienced higher collections in 2008 but [this] may not represent typical recovery in future years."[159]

In 2008, PG&E's total expense for main dig-in repairs was ($61,725) or a $61,725 credit. The cost for service dig-in repairs was $337,625. The net cost for both types of repairs was $275,900. In 2008, the reimbursed amount was 93% of the total cost. For years, 2006 and 2007, the reimbursement rate was 86% and 92%, respectively.[160]

Based on a lack of support for PG&E's use of 80% reimbursement rate, DRA recommends using the base year recorded expenses as the 2011 forecast. DRA's

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[157] Ex. PG&E-3, p. 18-31.

[158] Ex. PG&E-3, p. 18-31.

[159] Ex. PG&E-3, p. 18-32.

[160] PG&E's response to DRA-40, Q.1(b).

recommendation is for $275,000 and not the $1.1 million that PG&E forecasts. DRA's forecast is $784,000 lower than PG&E's forecast.

### 5. Cathodic Protection Restoration

PG&E forecasts $2.796 million for Cathodic Protection Restoration in 2011. In 2008, PG&E spent $3.6 million on CP Restoration. This estimate is comparable to the 2006-2007 recorded expenses for this work activity. The 2006-2007 average is $2.261 million. DRA does not take issue with PG&E's forecast for Cathodic Protection Restoration

### 6. Regulator Station Repairs

PG&E forecasts $1.2 million for Regulator Station Repairs. In 2008, PG&E spent $938,235 on this work activity. The 2006-2007 average for Regulator Station Repairs is $1.1 million.

DRA does not take issue with PG&E's 2011 forecast for Regulator Station Repairs.

### 7. Valve Repairs

PG&E forecasts $690,306 for Valve Repairs in 2011. PG&E 2011 forecast reflects the 2006-2008 level of work activities. In 2008, PG&E spent $681,744. The 2006-2007 average is $426,108.

DRA does not take issue with PG&E's 2011 forecast for Valve Repairs.

### 8. DIMP Corrective Maintenance

For DIMP Corrective Maintenance, PG&E forecasts $12.7 million for (1) Main Leak Repairs and (2) Service Leak Repairs.[161] For Main Leak Repairs, PG&E forecasts $4.1 million to perform 948 main leak repairs at a unit cost of $4,333 per main leak repair. For Service Leak Repairs, PG&E requests $8.6 million for 2011. PG&E estimates that it will perform 3,797 service leaks at a unit cost of $2,258 per repair. The unit cost to perform a main leak repair and the unit cost to perform a

[161] Ex. PG&E-3, p. 18-34.

service leak repair for DIMP Corrective Maintenance are the same as the main and service leak repairs discussed above, and tracked by MWC FI. DRA takes issue with PG&E's 2011 forecast and recommends $2.2 million instead. A comparison of PG&E's and DRA's 2011 forecast for DIMP corrective maintenance is presented in Table 7-12 below.

**Table 7-12**

**MWC FI—DIMP Corrective Maintenance**

**(In Thousands of Nominal Dollars)**

| | PG&E's 2011 Forecast | DRA's 2011 Forecast |
|---|---|---|
| Main Leak Repairs | $4,108 | $696 |
| Service Leak Repairs | $8,573 | $1,500 |
| **DIMP Corr. Maint. TOTAL** | **$12,681** | **$2,196** |

PG&E's forecast for DIMP Corrective Maintenance is based on the difference in the number of miles surveyed for leaks based on the transition from a 5-year leak survey cycle to a 3-year accelerated leak survey cycle. PG&E's forecast is based on the calculation that PG&E will be performing leak surveys on an additional 8,595 miles of mains and services.

DRA takes issue with the 8,595 miles of additional mains and services, as discussed in the forecast for MWC DE above. DRA's recommendation is for 5,532 additional miles. Please see the discussion under DIMP Leak Surveys above for reasons and rationale.

DRA takes issue with PG&E's use of the 0.767 leaks per mile to estimate the 2011 main and leak repairs. PG&E is basing this leak rate on the January-June 2008 leak rate.[162] DRA is not confident that this leak rate will continue to occur. With the mains and services and valve repairs that PG&E has been performing with the day-to-day operations and all the work associated with the GEEM program, DRA

[162] Ex. PG&E-3, p. 17-23.

expects that PG&E system will improve by 2011 and that the number of leaks will not be as high as this rate.

One of the main reasons for the significant increase in the number of leaks found in 2008 (from 0.18 in 2007 to 0.79 in 2008)[163] was due to deficiencies found in PG&E's system in the 2007-2008 timeframe. According to PG&E, the Company has been taking steps to mitigate the deficiencies identified so that it can improve the effectiveness of its maintenance programs. In testimony, PG&E identified the Leak Survey Program, and the Regulation and Valve Maintenance Programs as needing improvement. According to PG&E, the Company has identified corrective actions to improve these programs as part of its GEEM efforts.

Moreover, in PG&E's application, PG&E has proposed a lower leaks-per-mile rate in 2009 and beyond when calculating the number of repairs needed for mains and services. For mains leak repairs and service leak repairs, PG&E uses a 0.31 leaks per mile of routine leak survey to calculate the 2009 forecast, which DRA finds reasonable. As such, DRA recommends using the 0.31 leaks per mile to calculate the additional main and service leak repairs for DIMP corrective actions.

DRA also takes issue with PG&E's 2011 unit costs for mains and service leak repairs for the reasons discussed above. Namely, that PG&E bases the 2011 forecast on a "target" 2008 unit cost for both main and service leak repairs, which was significantly higher than the recorded 2008 unit cost for both types of repairs. Again, DRA recommends using the 2008 unit cost of $1,511 per service leak repair and $2,816 per main repair as the 2011 estimates for these repairs.

DRA does not take issue with PG&E's estimate that 72% of leaks require repairs on both mains and services.[164]

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[163] PG&E's response to DRA-38, Q.7.

[164] Ex. PG&E-3, p. 17-23.

Using PG&E's calculations, except with DRA's number for the additional miles and the DRA unit cost for main repairs, DRA forecasts 247 main leak repairs,[165] with a unit cost of $2,816 per repair. Also, using PG&E's calculations and DRA's number of additional miles and unit cost for service leak repairs, DRA forecasts 988 service leak repairs,[166] with a unit cost of $1,511 per repair.

DRA's recommendation is for $695,552 for main leak repairs compared to PG&E's forecast of $4.1 million. The difference is $3.4 million lower than PG&E's forecast.

As for service leak repair for DIMP corrective action, DRA recommends $1.5 million for 2011. DRA's forecast is $7.1 million lower than PG&E's forecast of $8.6 million.

### G. MWC EX – Gas Meter Protection Program

PG&E requests $5.2 million in 2011 for the Gas Meter Protection Program (MPP). Specifically, PG&E estimates that the Company will perform 4,569 bollard protections and 1,100 service valve installations.[167] DRA recommends $527,000 as the 2011 forecast for MWC EX. This amount is $4.7 million lower than PG&E's forecast.

PG&E states that the Gas MPP is a focused program that addresses gas meter locations that do not conform to current Company standards and federal pipeline safety regulations. The program focuses on two types of significantly non-conforming meter locations: (1) those that have inadequate protection from damage by vehicles; and (2) those that have inaccessible service or shutoff valves.[168]

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[165] Main leak repairs= 247 (5,532 miles x 0.31 leaks per mile x 20 percent leaks on main x 72 percent leaks require repair)

[166] Service Leak Repairs = 988 ( 5,532 miles x 0.31 leaks per mile x 80 percent leaks on services x 72 percent leaks require repair)

[167] Ex. PG&E-3, p. 19-22.

[168] Ex. PG&E-3, p. 19-18.

The current program scope consists of 400,000 meter locations that were identified as potentially requiring corrections and are to be inspected and corrected. PG&E corrects these meters by installing barrier posts and/or new valves. Of this population, PG&E identified approximately 104,000 that require corrective actions and, as of year end 2008, the Company has corrected 75,000.[169] There are 29,000 meter or valve locations that are scheduled for correction by 2016.

In PG&E's 2007 GRC, the Commission stated that it "expects PG&E to use all of $3.246 million of annual funding provided for the meter protection program (MPP) for that purpose only. If PG&E fails to do so, it should provide a detailed explanation in its next GRC."[170] PG&E did not spend the authorized money in 2007, and provided only a brief and unsatisfactory explanation as to why not. PG&E states in testimony that, "fewer units were completed than originally forecasted in the MPP due to re-prioritization of work during 2007, resulting in a 2007 expenditure of $0.607 million. Preventive maintenance expense work was determined to be a higher priority than MPP in 2007 by PG&E. Preventive maintenance was determined to be mandatory and/or high risk due to the prescriptive timeframes provided in regulations to perform maintenance on the gas system. The Gas MPP received a lower priority since deferral of the work beyond 2007 would have involved less risk."[171]

PG&E continued to under-spend the authorized funding for the Gas MPP in 2008 and also in 2009. In 2008, PG&E spent $965,000 on the Gas MPP program.[172] In 2009, PG&E spent $335,000 on this program.[173] PG&E's history of under-spending also extends to years 2004 and 2005. In PG&E's 2003 GRC, the

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[169] Ex. PG&E-3, p. 19-19.

[170] Ex. PG&E-3, p. 19-20, D.07-03-044.

[171] Ex. PG&E-3, p. 19-20.

[172] Ex. PG&E-3, Workpapers Supporting Chapter 19, p. WP 19-47.

[173] PG&E's response to DRA-122, Q.1, Att.01.

Commission authorized $2.5 million for the Gas MPP. However, in 2004, PG&E spent $1.9 million that year and in 2005, the Company spent only $1.6 million. PG&E states, "MPP actual expenditures were less than the amount from the rate cases 14 times since 1990."[174]

PG&E's forecast that it will perform 4,569 bollard protections and 1,100 service valve installations is unsupported. PG&E states that the unit forecast for 2011 was calculated based on the number of known locations that require protection by 2016, along with anticipated new locations as the company initiates an ongoing meter inspection program in 2010. PG&E forecasts 1,675 locations in 2009 and 1,402 locations in 2010. However, the Company forecasts 4,900 locations in 2011 in order to complete the program by 2016.[175] PG&E's estimate of service valve installations in 2011 is based on 6,100 locations that need to be completed to meet the 2016 deadline.[176]

DRA takes issue with PG&E's 2011 forecast for the MPP. DRA finds that PG&E has been continually and deliberately under-spending on this program, despite specific Commission directives not to do so. This represents deferred maintenance by PG&E and any need to make up for past under-spending should be done and fully funded by PG&E and not by ratepayers.

As for 2011, DRA finds that PG&E has not adequately substantiated the significant increase in units of work for bollard protections and valve installations. PG&E states, "the four-fold increase of the units forecasted for bollard protection and the increase from zero to 1,000 units of valve installations in 2011 was determined by forecasting the number of known locations that need to be completed by 2016 plus some additional meter locations that may be anticipated as the company

[174] PG&E's response to DRA-8, Q. 9.

[175] PG&E's response to DRA-8, Q. 12.

[176] Ibid.

initiates an on-going meter inspection program in 2010."[177] This response does not adequately justify the requested increase.

PG&E's justification for estimating an additional 1,100 units of valve installations in 2011 is not reasonable. PG&E states that, "From 2000-2003, approximately 1,320 new locations were identified and added to the database each year. Using this historical trend, PG&E anticipates that the leak surveyors will identify an additional 10,000 locations from 2010-2016."[178] PG&E's trending methodology is unreliable because the annual number of new locations added to the program in more recent years, such as 2005 -2008, is about 90% less than the new locations added in the stale 2000-2003 time frame that PG&E used in its response. Between 2005 and 2008, the average number of new locations added is only 116.5 locations each year.[179] What recent data shows is that the number of new locations will decrease and not increase by 2011.

PG&E's expressed concern for this program to complete by 2016 is exaggerated. According to the MPP 2008 Annual Progress Report,

> *"...93% of the identified locations have been corrected through bollard installation, meter relocation, valve installation or have been reclassified as acceptable and to not require any work. Therefore, at the end of 2008, 70% of the program duration has lapsed, 72% of the corrective work has been completed, 100% inspections have been completed..."*[180]

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[177] PG&E's response to DRA-8, Q. 10.

[178] PG&E's response to DRA-8, Q. 4.

[179] PG&E's response to DRA-8, Q. 3.

[180] Ex. PG&E-3, Workpapers Supporting Chapter 19, p. WP 19-47.

Based on this Report, DRA concludes that PG&E is well on its way to completing the program by 2016. Recent spending for this Program also suggests that PG&E is able to meet its goal at a level of funding well below the authorized amount of $3.2 million each year. The average expenditure recorded for MWC EX for years 2007-2009 is $526,664. PG&E has not justified the requested amount of $5.2 million for 2011.

Based on inadequate support for the forecast and PG&E's continued under-spending for this MWC, DRA recommends the 2007-2009 average spending as the 2011 forecast. DRA's recommendation of $526,664 is $4.7 million lower than PG&E's forecast.

## H. MWC GG, Gas Engineering and Planning

PG&E forecasts $3 million in 2011 to model the gas distribution system to ensure a safe, reliable, and cost effective supply of natural gas to customers and to ensure that the system can accommodate future load growth. In 2008, the Company spent $3.1 million for these work activities. DRA does not take issue with PG&E's request.

## I. MWC GZ, Gas Distribution Research

PG&E requests $1.5 million for gas distribution research, development, and demonstration work in targeted areas of gas distribution. DRA recommends $750,000 for MWC GZ. This amount is $750,000 lower than PG&E's request.

According to PG&E, the objectives of this program are to explore new opportunities, concepts, and technologies to continue to provide safe, reliable service to customers at a lower cost.[181] The 2011 forecast is three times higher than the 2008 recorded amount of $456,000. According to PG&E, the 2011 RD&D forecast reflects an appropriate support level for the overall O&M forecast in several major work categories (DE, DF, DG, FG, FH, and FI), so that new concepts and

[181] Ex. PG&E-3, p. 18-36.

technology can be pursued.[182] PG&E also requests that this account be subjected to a one-way balancing account. This means that if the company fails to spend the total amount forecasted for RD&D, the Company would be required to return the unspent amount to ratepayers.[183]

PG&E has not justified the three-fold increase compared to the base year level for this MWC. DRA asked PG&E to explain how and why the Company expects to significantly increase the spending for this MWC in 2011. The Company provided a listing of various potential projects that add up to $1.5 million, but has not shown that these projects connect to the increase in O&M spending that PG&E has estimated.[184] PG&E has not demonstrated how these projects relate to the increases in the following MWCs: DF, DG, FG, FH, and FI.

PG&E has had funding for gas RD&D since 2007. However, with the exception of the first year, when spending was recorded at $1 million, spending in the last two years has been sluggish. In 2008, PG&E spent $456,000 and in 2009, PG&E spent $304,000 on RD&D. Also, PG&E forecasts only $200,000 for 2009 and $212,000 for 2010. Yet, the 2011 forecast of $1.5 million is more than 6 times the 2010 estimated spending for PG&E.

PG&E has not provided adequate support to show that the work scope in 2011 will be significantly different from previous years, other than for the possible DIMP support.[185] Presumably PG&E has been exploring new opportunities, concepts, and technologies for the various on-going work activities captured by MWCs DF, DG, FG, FH, and FI. Mark and locate work, or preventive maintenance for gas, or cathodic protection have been ongoing and will continue through 2011 and beyond.

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[182] PG&E's response to DRA-23, Q. 4.

[183] Ex. PG&E-3, p. 18-38.

[184] PG&E's response to DRA-23, Q.2, Att.1.

[185] PG&E's response to DRA-23, Q. 2.

Finally, PG&E does not demonstrate that any of this spending has led to any actual opportunities, concepts or technologies to provide safe, reliable service at a lower cost.

Based on PG&E's inadequate support and DRA's recommendation for lower spending for MWCs DF, DG, FG, FH, and FI, DRA is not confident that PG&E will spend $1.5 million for RD&D in 2011.

DRA recommends $750,000 for the 2011 forecast, and that PG&E be required to provide a detailed explanation of how this money led to opportunities, concepts or technologies to provide safe, reliable service at a lower cost. This amount is higher than the recent spending level and should include the funding necessary to accommodate any new required DIMP regulations. In fact, the DRA 2011 forecast is more than twice the 2009 recorded amount of $304,000. DRA's 2011 forecast for MWC GZ is based on a lower forecast (approximately %45 of PG&E's request) for expenses associated with MWCs DF, DG, FH, and FI. DRA does not dispute PG&E's request for MWC FG.

DRA's forecast of $750,000 is $750,000 lower than PG&E's request of $1.5 million.

DRA does not take issue with PG&E's request for a one-way balancing account for MWC GZ.

## V. DISCUSSION / ANALYSIS OF TECHNICAL TRAINING

PG&E forecasts $19.083 million for Technical Training, in MWC AB. This request is for an expansion of the existing Workforce Development Program (PowerPathway) of $4.7 million, an expansion of curriculum development work through the Enterprise Skills and Qualifications program of $10.4 million, and the creation of the Knowledge Management program of $4.0 million.[186]

[186] Ex. PG&E-3, Chapter 20, Page 20-1.

PG&E has identified three Technical Training initiatives targeted at improving its employees' skills and qualifications: (1) Enterprise Skills and Qualifications for Employees, (2) Knowledge Management, and (3) Workforce Development.

DRA recommends $500,000 for MWC AB, Technical Training. DRA's analyses and recommendations for each project are discussed below. See Table 7-13 below for a comparison of PG&E's and DRA's forecasts for each of the cost categories tracked by MWC AB.

**Table 7-13**
**MWC AB—Technical Training**
**PG&E's and DRA's 2011 Forecasts**
**(In Thousands of Nominal Dollars)**

| | PG&E's Forecast | DRA's Forecast |
|---|---|---|
| Workforce Development | $4,700 | $0 |
| Enterprise Skills and Qualification Program | $10,300 | $0 |
| Knowledge Management Program | $4,000 | $500 |
| MWC AB-Technical Training TOTAL | $19,000 | $500 |

## A. Workforce Development (PowerPathway)

PG&E requests $4.7 million to expand a job-readiness program called PG&E PowerPathway. PG&E launched this program in January 2008 and requests more funding to expand this program. In 2008, PG&E collaborated with community colleges and held pilot programs at four sites: Laney College in Oakland, Fresno City College, the College of San Mateo and Butte College in Chico.[187] According to PG&E's testimony, PowerPathway works collaboratively with community colleges to prepare candidates on academic, physical, and soft skills to increase the rate at which candidates qualify on PG&E pre-employment test.[188] PowerPathway costs

[187] Ex. PG&E-3, P. 20-6.

[188] Ibid.

are also supplemented by PG&E Foundation and by grants awarded to Partners by other agencies.[189] DRA recommends no funding for this project.

To forecast the $4.7 million for 2011 in this GRC (The project is estimated at $5.5 million total and a portion of costs are allocated to other rate case proceedings), PG&E estimates $2 million for Staff, $750,000 for Education, $1.6 million for Career Prep, $375,000 for Industry, and $750,000 for Green.[190] In 2009, PG&E 2009 spent $1.2 million (cost without PG&E foundation and other grants) for this program. The 2009 spending compares closely with the 2008 recorded amount of $1 million.

DRA takes issue with PG&E's forecast of $4.7 million for 2011 because PG&E's forecast includes administrative costs that are currently embedded and captured in Human Resources (HR) Administrative & General (A&G) accounts.[191] Currently, the administrative expenses for the Director of the program and 4 Managers/Principals are already accounted for. In 2009, the total Staff costs for these employees were $636,705.[192] DRA also takes issue with PG&E's inclusion of a "one time development cost" amount of $500,000 for the work category entitled, "Intellectual Property Development/Technical Assistance."[193] One time costs should be normalized over the test year and attrition years.

DRA asked PG&E to provide a breakdown of the recorded costs for 2008 and 2009 in a format similar to the 2011 forecast in order to compare existing costs and to see what additional costs are needed. PG&E's response shows that the program, in its current stage, is more simply organized with regard to cost structure than what PG&E presented in its workpapers. The recorded costs simply show three major categories, (1) Staff, (2) Materials, and (3) Contracts and 2 miscellaneous cost items

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[189] PG&E's response to DRA-143, Q.16, Att.1.

[190] Ex. PG&E-3, Workpapers Supporting Chapter 20, pp. WP 20-7 to 20-9.

[191] PG&E's response to DRA-143, Q.18.

[192] PG&E's response to DRA-143, Q.16 Att.01.

[193] Ex. PG&E-3, Workpapers Supporting Chapter 20, p. WP 20-9.

for “activity types” and “Order costs”. It appears that many of the 2011 cost estimates include additional work categories that should have already been accounted for. For example, costs for “grant writing”, or “curriculum design by the colleges”, should already been accounted for since PG&E has been involved with these activities since the program inception. Costs for “STEM” and “High School Academy” are already accounted for since PG&E is currently offering these services. According to PG&E website, PG&E is currently in partnership with the California Department of Education to offer an education based on science, technology, engineering, and mathematics (STEM) to high school students called New Energy Academy.

Notwithstanding DRA’s issues with PG&E’s cost forecast, PG&E has not adequately supported its forecast for the additional $4.7 million. PG&E’s website shows a well-established program with a team of 12 PG&E employees dedicated to PowerPathway. DRA asked PG&E to identify the program’s goal and focus for 2011 and compare the differences to the 2009-2010 timeframe. PG&E stated in its response that “[i]n 2011, PG&E plans to build programming under the PowerPathway Training Network umbrella.”[194] PG&E provided a listing of community colleges and high schools identifying where the PowerPathway programs will be held in 2011. However, PG&E’s website shows that the PowerPathway programs have already started or will start in 2010 for all of the high schools identified. As for the community colleges, PowerPathway programs have already been established at half of these locations. PG&E included the same community colleges that were part of its pilot program in 2008 on this list as well.

As for the combined additional estimate of $1 million for Green and Industry costs, DRA believes that the additional costs for “website upgrade” or “convening and joint research” have not been supported. The PowerPathway website’s content is up to date, and PG&E has been attending conferences regarding workforce issues since the program’s inception. For Green costs to market energy efficiency training

[194] PG&E’s response to DRA-143, Q.19(a).

offered by PowerPathway, DRA observes that PG&E has been circulating marketing and communication materials for PowerPathway. PG&E has not substantiated the need for additional expenses for this item.

Since the costs for the requested employees under Staff, the costs for Education for STEM and High School Academy, the costs for Career Preparation, or the costs for Industry and Green have been adequately supported. DRA recommends no additional funding for Workforce Development/PowerPathway tracked by MWC AB. PowerPathway expenses are adequately funded through HR A&G accounts and PG&E has not supported the need for additional costs.

### B. Enterprise Skills and Qualification Program

PG&E requests $12 million each year from 2011-2013, to update or rewrite 175 courses and to add 193 new courses to the curriculum offered at PG&E Academy. According to PG&E testimony, PG&E Academy currently supports over 250 courses.[195]

Of this total, PG&E requests $10.3 million in this GRC to update 58 existing courses and to add 64 new courses in 2011 and to start tracking this expense in MWC AB.[196] In the past, PG&E has had costs associated with curriculum development and these costs were tracked in MWC DN from 2004-2006 and beginning in 2007, these costs were tracked by Human Resources Administrative and General Expenses as part of PG&E Academy.[197] The expenses for curriculum development for years 2004-2009 are presented in Table 7-14 below.

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[195] Ex. PG&E-3, p. 20-3.

[196] PG&E-3, Workpapers Supporting Chapter 20, p. WP 20-10, 175/3 years=54 and 193/3 years=64

[197] PG&E-3, P. 20-4, PG&E's response to DRA-44, Q.1, and PG&E's response to DRA-143, Q.1.

**Table 7-14**
**Curriculum Development**
**2004-2009 Recorded Expenses**
**(In 000s of Dollars)**

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|
| MWC DN | $909 | $963 | $431 | - | - | - |
| H.R A&G | - | - | - | $784 | $3,914 | $4,416 |

Source: 2004-2006 data from Ex.PG&E-3, p. 20-4, 2007-2009 data from PG&E's response to DRA-143, Q.1, Att.1.

PG&E wants to continue to track curriculum development costs in HR A&G accounts in 2011 and beyond and to only track additional costs for curriculum development that it requests in this GRC in MWC AB beginning in 2011.[198] According to PG&E, the number of PG&E curriculum development headcount to be tracked by HR A&G in 2011 is 12 and the number of new curriculum development that it requests for MWC AB in 2011 is 7. PG&E did not provide the curriculum development headcount for years 2004-2006. In 2007, there was 0.83 FTE; in 2008, there were 5.75 FTEs and in 2009, there were 11.08 FTEs. PG&E is essentially requesting to triple the number of curriculum development headcount that it had in the base year.[199]

PG&E states that approximately 25% of the curriculum development resources are PG&E employees with the remaining 75% being contract employees. PG&E estimates that $2.2 million will be needed to update the 58 existing courses, $8.7 million for the 64 new courses, and $1.1 million for PG&E labor, totaling $12 million in project costs.

DRA asked PG&E to provide historical data for curriculum development in order to determine if PG&E's forecast is reasonable. Although PG&E identified the

[198] PG&E's response to DRA-143, Q.1.

[199] In 2008, PG&E had 6 FTEs, PG&E will have 11 FTEs in HR A&G and requests an additional 7 for MWC AB.

number of new courses added to the curriculum at PG&E Academy for each year from 2000-2009, PG&E did not identify the courses, indicate whether they were developed by PG&E employees, contractors, or both. Also, PG&E did not identify the curriculum development costs for any of these courses. PG&E does not appear to have this level of basic data for 2009. Furthermore, PG&E has provided conflicting data for the number of new courses added each year. Table 7-15 and Table 7-16 below present inconsistent data provided by PG&E when DRA asked PG&E to identify the number of new courses added each year. PG&E does not appear to know how many new courses were added to its training facilities each year.

The number of courses added to the PG&E Academy curriculum for each year from 2003-2008 is shown in Table 7-15. Table 7-16 shows a different set of number of courses added for years 2000-2008.

**Table 7-15**
**PG&E Academy New Courses Added**

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Courses Added[200] | - | 37 | 32 | 50 | 24 | 31 |

Source: PG&E's response to DRA-44, Q.3

**Table 7-16**
**Course Additions and Revisions at PG&E Academy**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| New Courses | 21 | 1 | 2 | 0 | 6 | 6 | 13 | 9 | 15 | 1 |
| Revised Courses | 1 | 0 | 0 | 3 | 7 | 55 | 3 | 3 | 6 | 81 |

Source: PG&E's response to DRA-143, Q.5, Att.1.

[200] PG&E's response to DRA-44 Q. 3.

In a response to a DRA data request, PG&E claims that it started tracking costs associated with developing new courses in 2009 and provided a spreadsheet entitled, "2009 Curriculum Development Projects."[201] In this spreadsheet, PG&E identified 16 new courses and 9 "re-build" courses. The data in this spreadsheet also appears to contradict the data provided to other DRA data requests. Comparing the information identified here, PG&E developed 16 new courses in 2009 but in the response to DRA-143, Q.5, PG&E identified only 1 new course that was developed in 2009. Data for the revised/rebuilt courses also do not match—the spreadsheet provided shows 9 revised courses while PG&E claimed that 81 courses were revised in 2009 in its response to DRA-143, Q.5.

As for the number of new courses that PG&E forecasts will need to be created, DRA finds PG&E's estimate unrealistic compared to historical levels. According to PG&E, the Company plans to build 193 new courses from 2011 to 2013, or 64 new courses each year. This level of course addition either doubles, (when compared to the data provided in PG&E's response to DRA-44, Q.3), or quadruples, (when compared to the data provided in PG&E's response to DRA-145, Q.5), the base year recorded course additions.

For the 175 courses that PG&E wants to revise starting in 2011, many indicate that PG&E does not know the frequency of updates that occur or need to occur. Some courses show that PG&E last revised the course on a date that was earlier than the original created date. For example, the "SnowCat Training" and the "Manlift Training", identified as EQIP0046 and EQUIP0071, respectively, show a build date of 2007, but the last revised date shows June 30, 2005 and June 29, 2005.[202]

For many other courses, the original build date was missing, the last revised date was missing, or PG&E did not state how often these courses need to be revised. For many courses that need annual revisions, PG&E's data shows that

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[201] PG&E's response to DRA-143, Q.7, Att.1.

[202] PG&E's response to DRA-143, Q.5, Attachment 3.

these courses were last revised 3 to 5 years or more, ago. Yet the priority driver for these courses is identified as for "safety" reasons.[203] Furthermore, while PG&E claims that the need to update these courses is based on changes in Rules, standards or procedures, the data shows that PG&E has not been updating the courses based on PG&E's very own schedules.

Moreover, when DRA asked PG&E to explain how the company decided which of the particular 20% to 40% of 175 courses to rewrite, and to provide the justification used to make that determination, the company responded as follows:

> The extent of the rewrite is dependent upon the amount of the curriculum affected by the reason for the update, and is left to the discretion of the subject matter expert to decide.[204]

DRA also asked PG&E to provide the dates that PG&E plans to perform the course rewrite for each of the 175 courses identified for revision from 2011 to 2013. PG&E responded as follows:

> The dates for the rewrites have not yet been determined because the schedule for the work cannot be determined until funding is allocated to the work. Once funding has been allocated to the work, a detailed schedule will be developed.[205]

PG&E's response failed to explain how PG&E's forecast was determined. In PG&E's testimony and workpapers, the Company forecasts that it will need to revise a total of 175 courses at 58 courses each year, beginning in 2011. PG&E's forecast also identified 105 courses that need 20% rewrite and 70 courses that need 40% rewrite. But, PG&E has provided no justification at all for these forecasts, and lacks even the most basic information about any of its spending for this program. PG&E has not shown that the level of work it forecasts, which is above and beyond what

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[203] Ibid.

[204] PG&E's response to DRA-44, Q.8

[205] PG&E's response to DRA-44, Q. 8.

PG&E is already doing in terms of curriculum development, is necessary. PG&E's estimates for 2011are unsupported.

DRA also disputes PG&E's claim that the Company will need to perform more formal training (i.e., PG&E Academy) in the future. PG&E states that more and more tenured and qualified employees will be leaving the company and there will be less qualified employees to train new apprentices, and at some point its "long-time culture of learning by doing, or word-of-mouth information transfer" becomes unsafe.[206] PG&E claims that the current ratio of journeymen to apprentice is 1:3.5.[207] PG&E states that ideally, the ratio should be from 1:1 to 1:20.[208] The company believes that this ratio will continue to worsen through 2011.[209]

DRA requested that PG&E provide support for its claim; PG&E did not do so. PG&E stated that "the 1:3.5 ratio discussed in the testimony was based on a poll of supervisors in the field."[210] However, the actual data of historical lineman to apprentice ratios show otherwise and the 1:35 is unsupported.[211] The ratio of journeymen to apprentice for companywide is 1:2 for the combined 2006-2009 period for all 7 Work Areas. In fact in 2009, in several work areas, the ratio of journeymen to apprentice showed that PG&E had the opposite problem, in that it had more journeymen than apprentice. In one area in particular, Area 5, PG&E had a ratio of 8:1. In two areas, Area 4 and Area 6, the ratio was 3:1. [212]

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[206] Ex. PG&E-3, p. 20-3.

[207] Ibid.

[208] Ibid.

[209] Ibid.

[210] PG&E's response to DRA-143, Q.9.

[211] Ibid.

[212] Ibid.

Based on the reasons above, DRA concludes that PG&E has not adequately justified the need to revise and add new courses to PG&E Academy at the level it forecasts for 2011. As PG&E has shown by providing the data for MWC DN and for HR A&G, there are embedded expenses to cover curriculum development. In 2009 recorded expenses for HR A&G show that $4.416 million was spent on curriculum development. Currently there are 11 FTEs dedicated to curriculum development for PG&E Academy. PG&E has not justified the additional 7 FTEs and additional contractor costs. As such, DRA recommends $0 funding for MWC AB and not the $10.4 million PG&E requests. PG&E is already spending $4.4 million on curriculum funding through HR A&G. DRA does not take issue with moving the expenses for curriculum development to MWC AB beginning in 2011, but in doing so, PG&E must remove the same amount from HR A&G expenses accordingly.

### C. Knowledge Management Program

PG&E requests $4.7 million to implement a knowledge capture strategy.[213] Of this $4.7 million, $4.0 million is being requested in this GRC. The remaining $0.7 million is allocated to other rate case proceedings.[214] PG&E claims that this project has become critical for the Company because it anticipates a “silver tsunami” over the next 5 years.[215] According to PG&E testimony, 42 percent of its workforce is eligible to retire over the next 5 years and PG&E anticipates the level of exits to resume and accelerate as the economy recovers.[216] PG&E’s Knowledge Management program is supposed to mitigate the risk from knowledge loss due to employee departure.[217]

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[213] Ex. PG&E-3, p. Workpapers Supporting Chapter 20, p. WP 20-6.

[214] Ex.PG&E-3, p. Workpapers Supporting Chapter 20, p. WP 20-6.

[215] Ex. PG&E-3, p. 20-5.

[216] Ibid.

[217] Ex. PG&E-3, p. 20-5.

PG&E's costs consist of (1) $1 million for Staff: 1 director, 3 managers, and 2 analysts, (2) $1.6 million for Baseline Technologies: knowledge mapping software, archival database license, on-demand transfer technology software, and an IT interface manager-consultant, (3) $820,000 for Knowledge Transfer: contracted faculty, employee faculty, curriculum development, materials and supplies, intellectual property development, and faculty development, and (4) $1.3 million for knowledge extraction process. Table 7-17 provides a comparison of PG&E's and DRA's forecast for each of these cost categories.

**Table 7-17**
**MWC AB—Technical Training**
**PG&E's and DRA's 2011 Forecasts**
**(In Thousands of Nominal Dollars)**

| | PG&E | DRA |
|---|---|---|
| Staff | $1,000 | $0 |
| Knowledge Capture/Knowledge Mgmt Baseline Technologies | $1,600 | $500 |
| Knowledge Transfer/In-Situ Learning | $820 | $0 |
| Knowledge Capture | $1,300 | $0 |
| KNOWLEDGE MANAGEMENT TOTAL | $4,700 | $500 |

As of March 1, 2010, PG&E has incurred $359,000 on Knowledge Management.[218] According to PG&E, there are five phases to this project and PG&E is currently in phase 2. Phase 3 and phase 4 goals are scheduled for completion in the 4th quarter of 2012 and 2013 while phase 5 is scheduled to be completed in 2011.[219]

[218] PG&E's response to DRA-143-Q. 13 (b).

[219] Ibid.

DRA recommends $500,000 for Knowledge Management in 2011 because PG&E has not adequately substantiated the forecast of $4 million to implement the proposed knowledge management process. First, PG&E has not adequately supported its claim that the "silver tsunami" will hit the Company once the economy recovers. DRA notes that the issue with knowledge loss due to employees retiring, is not a new one that is scheduled to occur only in the test year, 2011. Although PG&E claims that 42% of its workforce is eligible to retire, PG&E's forecast is unsupported. PG&E's projection is based on an annual increase at a rate of 3.7% or higher, and up to 4.2% each year, from 2009-2013 without any support.[220] While the number of eligible to retire ranges between 21.3% and 22.9% for the past 5 years, with annual increases not exceeding 1%, PG&E's 5-year projection is 42%. PG&E has not offered any evidence to convince DRA that the 42% is a realistic forecast. Moreover, PG&E's calculation relies on a 2009 forecast that is 13% higher than the actual number eligible to retire recorded for 2009.[221] Based on this fact alone, PG&E's 5-year projection of 42% is unreliable and unrealistic.

DRA contends that in reality the number of employees who actually retire in the next five years will not deviate significantly from PG&E's pattern between 2000 and 2006. In 2004, the number of eligible to retire (4,215) increased 74% compared to the 2000 number (2,416). Yet, the percentage of retirements only increased from 2.2% to 2.7%.[222] The percentage of retirement has hovered at this level the last few years and even into 2009.

Even when the economy was doing well, between 2004 and 2006, the percentage of actual retirements only ranged from 2.7% to 3.2%, although the percentage of eligible retirement increased from 20.1% to 22.0%.

DRA asked PG&E to substantiate its claim that, "PG&E anticipates the levels of exits to resume and accelerate as the economy recovers." PG&E simply stated

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[220] PG&E's response to DRA-239, Q.1.

[221] PG&E's response to DRA-239, Q.1 and PG&E's response to DRA-143, Q.11, Att.1.

[222] PG&E's response to DRA-143, Q.11 Att.01.

that the data provided to DRA, which shows the number of eligible and actual retirements, reveals this trend.[223] DRA refutes PG&E's claim that the number of employees eligible to retire with full benefits has more than doubled for the last 10 years. DRA notes that this was already the case in 2004, when the number of eligible employees increased from 893 in 2000 to 1,964 in 2004. Yet, the number of actual retirements did not "accelerate" as PG&E feared. In fact, the percentage of actual retirements simply increased from 2.2% to 2.7%.

DRA expects the level of actual retirement percentage to remain steady in the next few years as PG&E has not offered any evidence to show otherwise. Although PG&E needs to manage knowledge loss, it has not adequately substantiated the need for full funding to begin harvesting knowledge in 2011. The response to a DRA data request shows that PG&E will not fully complete all 5 phases of this project until the fourth quarter of 2013.[224] According to this data response, PG&E will not be contracting with vendors for knowledge harvest and creating new knowledge tools, until 2012 and 2013, respectively. DRA concludes that PG&E's request for full funding of $4 million in 2011 is unreasonable, because some of the work activities for this project will not be performed in 2011. DRA's analysis, presented below, does not dispute some of PG&E's cost estimates. However, other costs are not adequately supported. Also, PG&E's total estimate of $4 million includes costs that are for one-time expenses, and that have not been normalized for the test year, such as the cost for "[m]arketing, intellectual property development, printing"[225] or the one-time costs of the enterprise search capability of approximately $50,000.[226]

Of the $4 million that PG&E forecasts, it estimates $1 million for required staff to run this program (1 director, 3 managers and 2 analysts,). However, PG&E does

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[223] PG&E's response to DRA-143, Q. 12.

[224] PG&E's response to DRA-143, Q. 13.

[225] Ex. PG&E-3, p. Workpapers Supporting Chapter 20, p. WP 20-6.

[226] PG&E's response to DRA-143, Q.15, (d), att. 4.

not have adequate support for this request. According to the results of PG&E's pilot program for knowledge management, the Company has already performed risk assessment on 5,800 employees by the end of 2009, and it only spent $359,000.[227] Since it appears that PG&E has embedded funding for the risk assessment phase of this project and because PG&E's existing staff is already performing the required risk assessment, there is no need to add an additional 5 employees to this project. As for the Director, PG&E claims that his/her main job responsibility is to conduct knowledge harvesting on 48 employees. PG&E has not presented any reasons why this is necessary since PG&E will be using knowledge harvest vendors for this. PG&E stated that the company will already be using these vendors on half of the employees identified.[228] It appears that PG&E has not justified the additional $1 million for 5 additional staff to perform risk assessments of the remaining 15,200 employees.[229]

DRA concludes that PG&E's estimate of $1.6 million for Knowledge Capture/Knowledge Management Baseline Technologies vague, and in general, not supported by the workpapers provided. While PG&E's estimate of $500,000 for "one enterprise license software...."[230] is supported by a vendor bid,[231] the cost estimate of $500,000 for the "archival database license" is not supported. PG&E claims that "...the total cost is estimated to be $2.9 million,...divided by the five clients to get $577,800."[232] PG&E included a document entitled "Preliminary Application Development Project Cost Checklist" which does not show how the

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[227] PG&E's response to DRA-143, Q. 13, (b) and Q.15 (e).

[228] PG&E's response to DRA-143, Q.15 (e).

[229] DRA requested that PG&E justify the 5 employees in its 2011 forecast for Staff. (DRA-143, Q.15 (e).

[230] Ex. PG&E-3, p. Workpapers Supporting Chapter 20, p. WP 20-5.

[231] PG&E's response to DRA-143, Q. 15, (b) att. 1

[232] PG&E's response to DRA-143, Q.15, (c).

$577,800 was calculated. While PG&E claims that this cost estimate is for "the archival database license PG&E will be using...Documentum," no description of any kind was on the document provided. PG&E simply circled an amount "$2,889,000" as the total "Preliminary Project Cost (Including One Year of O&M."

PG&E also estimates $500,000 for "On-demand Transfer technology software" which is also not supported. While its workpapers describe the cost as "one enterprise license for software and content development using the question and answer engine like AskJeeves," the vendor quote PG&E provided shows only $165,600 per year for "the annual subscription cost." Additional costs were for items that do not appear to relate to the license, such as "set up charges" and "travel expenses." Additionally, one vendor quote provided does not match with the amount requested by PG&E. PG&E states that the one-time costs of the enterprise search capability is approximately $50,000, but the pricing offered was for $7,500.[233]

For the "Staff" cost category, DRA recommends $500,000 for one enterprise license software for 2011.

As for Knowledge Transfer-In Situ Training, PG&E estimates that it will need $820,000 for 2011 for contracted faculty, employee faculty, curriculum development, materials and supplies, intellectual property development, and faculty development.[234] DRA recommends zero funding for this cost category.

DRA asked PG&E to provide support for the requested quantities and costs associated with each of the items identified. PG&E provided a document entitled, "Training Proposal for Pacific Gas and Electric" which shows a total amount that is different from that in PG&E's workpapers.[235] DRA also questions PG&E's inclusion in its workpapers of additional costs for "partial salary of employees" of $270,000. Since PG&E will be using existing employees, these employees' salaries should already be accounted for and PG&E should not be requesting additional

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[233] PG&E's response to DRA-143, Q.15, (d), att. 4.

[234] Ex. PG&E-3, p. Workpapers Supporting Chapter 20, p. WP 20-6.

[235] PG&E's response to DRA-143-Q.15, (f) Att. 5

funding for them. DRA concludes that PG&E has not adequately justified the need for $820,000 for Knowledge Transfer.

For the $1.3 million for Knowledge Extraction process, DRA finds PG&E's estimate of 43 employees unrealistic and not adequately justified and recommends zero funding for this cost category in 2011.

DRA questions PG&E's reasoning of how it determined that 43 employees will be undergoing the knowledge extraction process in 2011. PG&E stated that the pilot program required that 10% of the employee base require knowledge extraction. According to PG&E, the 10% is based on 4 employees with "high priority rating" and 32 employees with "priority rating" out of 3,651 employees from a pilot program called "M&C Pilot."[236] Based on this pilot program, PG&E forecasts that 10% of its employees will require some level of knowledge harvesting and anticipates that 97 employees will be undergoing the knowledge extraction process in 2011.

DRA requested a copy of the M&C Pilot and the results of that project.[237] PG&E did not provide a copy of this pilot to DRA. Instead, PG&E provided the following in its response:

> "The M&C pilot project for the knowledge management program, conducted in 2009 and the beginning of 2010, consisted of the following work:
>
> - Conducted benchmarking with other companies on their knowledge management programs,
> - Developed risk assessment guide,
> - Conducted knowledge transfer presentations to M&C leadership (directors, superintendents, and supervisors) and interviewed leaders who felt they may have had employees with critical tacit knowledge,
> - Conducted risk assessments, and
> - Reported results to the M&C leadership."[238]

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[236] PG&E's response to DRA143, Q.15(e).

[237] PG&E's response to DRA-421, Q.1.

PG&E did not provide the project scope, the questionnaire(s) used for the interview(s) and/or criteria used to assess the risks associated with each employee, the risk assessment guide, or any risk assessments. PG&E also failed to provide a copy of the results of the M&C Pilot and provided a summary of the results instead. However, the result summaries that PG&E provided vary greatly compared to the result summaries provided in a response to an earlier DRA data request.[239] For example, the earlier summary from the March 2010 response shows that 196 employees were interviewed from 7 areas. The summary from April 2010 shows that 192 employees were interviewed from 5 areas for electric and 6 areas for gas. The result summaries also showed conflicting areas where the "high priority rating" employees came from. The March 2010 shows 4 employees from Areas 1, 2, and 3 that were classified as "high priority rating" while the April 2010 shows these employees as from the "Bay Area." Also, the summaries show inconsistencies with regard to the number of employees who were classified as "priority rating." The March 2010 response shows 32 employees in this category, while the April 2010 response only shows 10.

Based on the conflicting information provided for the pilot project, DRA does not have any confidence in the data that PG&E used to base its 2011 forecast. DRA concludes that PG&E has no support for the Knowledge Extraction estimate. As such DRA recommends zero funding instead of the $1.3 million that PG&E forecasts for Knowledge Extraction.

Based on the analysis above, DRA recommends $500,000 for Knowledge Management and not $4 million that PG&E requests for 2011. This amount is reasonable because for the past 10 years, PG&E has spent a total of $513,000 in its

(continued from previous page)

[238] PG&E's response to DRA-241, Q. 1.

[239] PG&E's response to DRA-241, Q.1 and PG&E's response to DRA-143, Q.15(e).

attempt to deal with tacit knowledge loss, using an approach similar to the approach described in this GRC.[240]

# VI. DISCUSSION / ANALYSIS OF APPLIED TECHNOLOGY SERVICES

## A. MWC AB—Electric and Magnetic Fields Program

According to PG&E, the Applied Technology Services is a multidisciplinary team of approximately 1,000 engineers, scientists, technicians and support staff that provide assistance to various engineering and operating departments. ATS services include field operations, engineering and testing at PG&E's laboratories in San Ramon. ATS supports the following areas: (1) Civil and Mechanical Engineering, (2) Electrical Testing, Analysis and Design, (3)Electromagnetic Field, (4) Instrument Calibration and Repair, (5) Materials, Chemistry and Environmental Support, (6) Performance Testing and Analysis, (7) Nondestructive Examination, (8) Climate Change, and (9) Meteorology Services.

PG&E requests $1.8 million for MWC AB, Electric and Magnetic Fields Program (EMF), for 2011. Of this total, $1.1 million is for the Electric and Magnetic Fields Program and $637,000 is for Climate Change Operational Impact/Planning.[241] In 2008, PG&E spent $775,000 on the EMF Program and $79,000 on the Climate Change Program. The 2004-2008 recorded expenses for MWC AB is presented below. DRA recommends $835,000 for the work activities captured by this MWC. DRA's recommendation is $916,000 lower than PG&E's request.

[240] PG&E's response to DRA-242, Q.3.

[241] Ex. PG&E-3, pp. WP 23-11 to 23-12.

**Table 7-18**
**2004-2008 Recorded Data for MWC AB**
**(in Thousands of Nominal Dollars)**

| | RECORDED | | | | | FORECAST |
|---|---|---|---|---|---|---|
| Description | 2004 | 2005 | 2006 | 2007 | 2008 | 2011 |
| MWC AB | $764 | $757 | $862 | $724 | $854 | $1,751 |

Source: 2004-2008 data from Exhibit PG&E-3, Chapter 23, Page 23-13

PG&E's 2011 forecast is based on an increase of $339,000 to participate in two EPRI EMP Research Program offerings: (1) Radio Frequency, and (2) Occupational Studies, and $558,000 of additional funding for labor and contract costs.[242]

DRA takes issue with PG&E's 2011 forecast with the EMF Program as well as the Climate Change Program. DRA finds that PG&E does not have adequate support for either programs and therefore, the 2011 forecast of $1.8 million is unjustified.

PG&E's request of $339,000 for increased funding to participate in two new EPRI programs in 2011. But according to a data response from PG&E, the Company is currently participating with the programs requested for 2011. PG&E states the following in its response to DRA data request:

> In 2010, PG&E is participating with the following EMF Health Assessment and Radio-Frequency Safety Program: (1) Program 60a – Community & Residential Studies, (2) Program 60b - Occupational Studies, (3) Program 60c - Radio-Frequency Safety & Wireless Technology.[243]

Based on this response, PG&E already has 2010 embedded funding for the Radio Frequency and Occupational Studies programs that the Company requests

[242] Ex. PG&E-3, p. 23-9.

[243] PG&E's response to DRA-170, Q. 4.

for 2011. No additional funding is necessary for the EMF program in 2011 because this is not a new cost for the Test Year.

As for the Climate Change Program, PG&E has not substantiated the increase of $558,000 above the 2008 recorded for 2011. PG&E has not explained how or why this program will be focused differently in 2011 than in 2008. This program has been in existence since 2007 and PG&E has not been spending at the level it forecasts for 2011. In 2007, PG&E did not record any costs for this program. In 2008, PG&E spent $79,000 and in 2009, the Company spent $110,000.

Although PG&E provided a breakdown of the $558,000 request, there were no supporting documents and/or calculations provided to show how the $558,000 was derived.

Based on a lack of adequate support for the increase from the base year spending, DRA recommends the 2009 recorded cost of $835,000 as the 2011 forecast for the EMF and Climate Change Program as tracked by MWC AB. DRA's recommendation is $916,000 lower than PG&E's forecast.

DRA's recommendation compares closely with PG&E's recent historical spending for this MWC. The recorded spending for years 2004-2009 is presented in Table 7-19 below.

**Table 7-19**

**PG&E 2004-2009 Recorded Expenses**

**for MWC AB, Applied Technology Services**

**(In 000s of Nominal Dollars)**

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| 764 | 757 | 862 | 724 | 854 | 835 |

Source: PG&E's response to DRA-170, Q.1.