Docket:	:	R.11-02-019
Exhibit Number	:	DRA-01
Commissioner	:	Florio
ALJ	:	Bushey
Witness	:	Peck

DIVISION OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

DRA Report on the Pipeline Safety Enhancement Plan of Pacific Gas and Electric Company

Executive Summary

San Francisco, California
January 31, 2012

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CHAPTER 1 INTRODUCTION AND BACKGROUND

This Exhibit presents an executive summary of the Division of Ratepayer Advocates' ("DRA") analyses and recommendations on Pacific Gas and Electric Company's ("PG&E") Pipeline Safety Enhancement Plan ("PSEP") filed in this rulemaking proceeding on August 26, 2011. DRA developed these analyses and recommendations pursuant to the Scoping Memo and Ruling of the Assigned Commissioner issued on June 16, 2011 in R.11-02-019, as amended on November 2, 2011.[1]

There are four main components of the PSEP: (1) Pipeline Modernization; (2) Valve Automation; (3) Pipeline Records Integration; and (4) Interim Safety Enhancement Measures.[2] PG&E proposes to implement its PSEP in two phases, Phase 1 in 2011-2014 and Phase 2 commencing in 2015.[3] As proposed, the two phases will target different pipeline segments.[4] In Phase 1, PG&E proposes to target pipeline segments in highly populated areas, pipelines that have seam welds that do not meet modern manufacturing, fabrication or construction standards, and pipelines that were "grandfathered" under regulations adopted in 1970 and have not been strength tested. In Phase 2, PG&E proposes to target pipeline segments that have been previously strength tested to 49 Code of Federal Regulations Part 192 Subpart J requirements or are in rural areas. DRA's Prepared Testimony analyzes and makes recommendations regarding Phase 1 of PG&E's PSEP. At this time PG&E is not yet prepared to present a plan for Phase 2 although its preliminary cost estimate for Phase 2 is $6.8 billion to $9.0 billion.[5]

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[1] The November 2, 2011 Amended Scoping Memo directed parties to serve testimony on PG&E's PSEP and associated ratemaking issues by January 31, 2012.

[2] *Id*, pp.1-4 through 1-11.

[3] PG&E Prepared Testimony in R.11-02-019 dated Aug.26, 2011 ("PG&E Testimony"), p.1-3 (updated for Errata on Nov. 4, 2011).

[4] *Id*.

[5] PG&E Response to DRA PZS9-6. PG&E's reference is DRA_022-Q06. PG&E states the broad estimate was developed using Phase 1 proxy costs and adjusting them to reflect the larger scope of work and the time value of money.

DRA identified flaws in the Phase 1 Plan that impact both safety and costs, and makes specific recommendations to remedy these deficiencies. On the question of cost responsibility, DRA's core recommendation is that PG&E be held responsible for the costs of Phase 1 of the Implementation Plan incurred before PG&E's next rate case. In other words, DRA recommends that the Commission deny PG&E's request for additional ratepayer funding for Phase 1 costs above and beyond the funding authorized in the most recent rate case. DRA finds that many of PG&E's cost estimates are too high, and identifies many ways to lower them. To be clear, however, in discussing adjustments to PG&E's estimated costs, DRA is not suggesting that the burden of these costs be placed on ratepayers.

CHAPTER 2 ORGANIZATION OF DRA EXHIBITS

DRA witnesses, including DRA's consultants from the Berkeley Engineering And Research, Inc. ("BEAR") and a pipeline expert, Neil Delfino, have addressed all of the main components of Phase 1 of PG&E's PSEP.: Their testimony is organized as follows:

- **Exhibit DRA-01** (Peck)–Executive Summary of the DRA Exhibits, Findings, and Recommendations.
- **Exhibit DRA-02** Pocta) - Policy testimony and recommendations pertaining to recovery by PG&E of the costs of its proposed PSEP.
- **Exhibit DRA-03** (Roberts) - Overall analysis of PG&E's PSEP Pipeline Modernization Plan. This exhibit builds upon and incorporates the expert testimonies of witnesses Rondinone, Delfino, and Scholz, which are provided in Exhibits DRA-04, DRA-05, and DRA-06 respectively. Those testimonies are summarized in Exhibit DRA-03 and are used to develop recommended cost adjustments and general recommendations aimed at improving the effectiveness and cost-effectiveness of the PSEP.
- **Exhibit DRA-04** (Rondinone) – Evaluates the PSEP Decision Tree which is a sequential decision process flow chart that PG&E uses to define and categorize PG&E's transmission pipeline against various threats. The PSEP Decision Tree was evaluated for errors, risk assessment, and change in scope, with a focus on reliably determining which segments should be prioritized for Phase 1.

- **Exhibit DRA-05** – (Delfino) Evaluates PG&E's cost estimates for the PSEP Pipeline Replacement and Hydrostatic Testing as as compared to industry estimates and provides recommendations.
- **Exhibit DRA-06** (Scholz) – Evaluates the PSEP cost models and specific costs and provides recommendations. Also examines in detail individual pipeline projects, to assess the overall quality of the PSEP.
- **Exhibit DRA-07** (Oh) – Evaluates and provides recommendations for the PSEP Valve Automation Program, Interim Safety Enhancement Measures, and Program Management Office ("PMO").
- **Exhibit DRA-08** – Analyzes and provides recommendations regarding the PSEP Pipeline Records Integration Program ("PRIP") forecasted costs for 2012 through 2014.
- **Exhibit DRA-09** - Presents DRA's recommendations regarding PG&E's PSEP Phase 1 revenue requirements, cost allocation and rate design, including rate of return ("ROR").
- **Exhibit DRA-10** – Provides Commission General Order ("GO") 28 (regarding preservation of records of public utilities) and 58 (regarding standards for gas service in California).
- **Exhibit DRA-11** – Provides Commission General Order 112 (regarding rules governing design, construction, testing, maintenance, and operation of utility gas gathering, transmission, and distribution piping systems).
- **Exhibit DRA-12** – DRA witnesses' statement of qualifications.

CHAPTER 3 SUMMARY OF DRA FINDINGS AND RECOMMENDATIONS

A) POLICY – COST RECOVERY (EXHIBIT DRA-02)

On September 9, 2010 natural gas transmission pipeline known as Line 132 owned and operated by PG&E exploded, killing 8 people, injuring many, destroying 38 homes and damaging 70. PG&E has stated publicly that it is liable for the San Bruno pipeline accident. The San Bruno explosion on the PG&E system and PG&E's subsequent inability to locate pipeline records led to several investigations, including one by the National Transportation Safety Board ("NTSB"). The NTSB Report has provided a great deal of evidence regarding inadequacies in PG&E's pipeline integrity management program. Well-supported findings by the NTSB and by other independent investigators provide support for a Commission decision that any costs incurred prior to the next PG&E Gas Transmission and Storage ("GT&S") General Rate Case ("GRC") should be borne by PG&E shareholders.

a. Recommendation 1: PG&E Customer Rates Should Not Be Increased Prior to the Next GRC for PSEP costs

Consistent with forecast test year ratemaking, the authorized revenues adopted in a GRC is intended to fund all of the costs of providing service and operating the utility system during the period covered by the rate case decision. How the funds are ultimately spent is largely left to the utility's management. Allowing PG&E to recover any additional revenue prior to the next Gas Transmission and Storage (GT&S) rate case is contrary to forecast test year ratemaking and the Gas Accord V Settlement Agreement (i.e., PG&E's recent GT&S application for 2011 through 2014). The utility has numerous options at its disposal to control and manage its costs effectively. It is up to PG&E management and its Board to manage its costs within the parameters of the ratepayer revenues authorized in the GRC.

One of the primary concerns identified subsequent to the San Bruno incident by various government entities has been PG&E's lack of records and proper record maintenance associated with its natural gas system. Among other things, records should have been kept of hydrostatic testing, which has been an industry standard for over 75 years. A basic lack of verifiable records to assure the integrity of the pipeline system results in a need for new hydrostatic tests and potentially additional investment in new pipeline. PG&E is responsible for identifying cost-effective solutions to address the expenses and investment associated with ensuring safe gas operations rather than simply looking to ratepayers as deep pockets to finance this significant project. The Commission should hold PG&E management and shareholders responsible for this undertaking.

b. Recommendation 2: PG&E Should Be Financially Responsible for All Costs Associated with Hydrostatic Testing of its Natural Gas Pipelines

In D.11-06-017 the Commission ordered all California natural gas transmission operators to develop Implementation Plans for orderly and cost effective replacement or testing of all natural gas transmission pipelines that have not been pressure tested. These plans may include alternatives that demonstrably achieve the same standard of safety. The pressure testing of natural gas transmission pipelines has been an industry standard for over 75 years. DRA recommends that PG&E be held responsible for the costs associated with hydrostatic testing for all transmission pipelines installed after 1935 in the absence of records that show a test was performed in accordance with industry standards.

c. Recommendation 3: PG&E should bear the cost of investment for replacements of transmission pipelines installed in 1955 and subsequent years

For investment in new pipeline to replace gas transmission pipeline installed after 1955, the investment cost of the Implementation Plan should be entirely borne by PG&E shareholders. For any pipeline installed subsequent to 1955, the American Standards Association (ASA) code for gas transmission and distribution piping systems clearly stated that records should be retained for hydrostatic tests. The ASA code adopted in 1955 makes it crystal clear that records for hydrostatic tests are to be maintained for the useful life of the pipeline and main. This was 20 years after the initial ASA Code adopting hydrostatic tests were adopted in 1935. Any utility that hadn't been following the industry standard for hydrostatic testing and keeping accurate records of the test in its files should have been doing so by 1955. PG&E's ratepayers had nothing to do with PG&E's failure to follow the industry standard.

d. Recommendation 4: For replacements of transmission pipelines installed prior to 1955, a 200 point decrease in PG&E's rate of return on equity should be imposed

This adjustment will mitigate the impact of the investment on ratepayers while not placing the entire burden upon PG&E. There should also be a 20% adjustment to expenses that are incurred and associated with the capital improvement. This strikes an equitable balance between ratepayers and shareholders while recognizing that transmission pipelines installed prior to 1955 and after 1935 should have been properly hydrostatically tested pursuant to industry standards, and records maintained.

B) PIPELINE MODERNIZATION AND IMPLEMENTATION PLAN (EXHIBITS DRA-03, DRA-04, DRA-05, DRA-06)

DRA analyzed the key elements of the PSEP Pipeline Plan (e.g., Decision Tree, Cost Models, Contingency, etc.) to evaluate the quality and cost effectiveness of the plan. Overall, DRA found that the PSEP Pipeline Plan provides a reasonable "study or feasibility" estimate, consistent with the Association for the Advancement of Cost Engineering (AACE) International Class 4 estimate PG&E requested from its consultant, Gulf International.[6] However, this estimate should not be mistaken for a more detailed and accurate budget authority or bid estimate, provided by AACE Class 3, 2, or 1 cost estimates. Fundamentally, cost recovery for a multi-billion dollar four-year project should not be based on a feasibility study cost estimate. Additionally, DRA found significant flaws within PG&E's decision tree, the project PSEP Pipeline Implementation Plan, project and cost models, and the application of these models. Key findings include:

1. PG&E's PSEP Pipeline Plan is based on preliminary and incomplete evaluation of PG&E's records and results from the Maximum Allowable Operating Pressure (MAOP) validation process.
2. The MAOP validation process should be completed by February 2012 for HCA pipelines, to support updates to the PSEP Pipeline Plan in 2012, but the impact of revised High consequence area (HCA) classifications are uncertain.
3. PG&E's decision tree (DT) requires an excessive number of pipeline segments for replacement, when they should be hydrotested.
4. PG&E's DT requires an excessive number of pipeline segments to be included in Phase 1, rather than subsequent Phases.
5. PG&E's PSEP Pipeline Implementation Plan is not consistent with the DT: It includes many unnecessary segments, and omits some which should be included.
6. Approximately two-thirds of PG&E's Phase 1 costs are driven by engineering evaluation and safety needs; the balance are included for the sake of "efficiency":
    - PG&E's PSEP Pipeline Implementation Plan includes Phase 1 replacement or hydrotesting for many segments which could be addressed in Phase 2 with less expensive mitigation measures,
    - The 's rationale for including Phase 2 segments in Phase 1 is often flawed, based on a review of sample projects.
7. The PSEP Pipeline Plan includes capacity increases, and line re-routes which are not identified or justified in the testimony.

[6] Pacific Gas and Electric Company Pipeline Safety Enhancement Plan Prepared Testimony dated August 26, 2011, as filed in R.11-02-019 (PG&E Testimony), p.7-25, Figure 7-3.

8. Based on a review of a limited number of sample projects, PG&E's PSEP Pipeline Implementation Plan includes multiple flaws that tend to increase the cost of the PSEP Pipeline Plan.

9. Adding low priority segments to Phase 1 hydrotest projects will make sense in many cases, but this is not generally true for replacement projects.

10. PG&E's models include many deviations from those described in the testimony which are not identified or justified in the testimony.

11. Unit costs for replacement and hydrotesting are high compared to industry averages, and analysis provided by DRA Witness Delfino.

12. In the proposed Plan, PG&E shareholders are not paying for the full cost of remediation caused by PG&E's lack of records.

13. PG&E's contingency request is excessive, and based on an incomplete analysis.

The combined impact of these errors is a gross inflation of the forecasted costs PG&E is requesting to implement the PSEP Pipeline Plan. Adoption of DRA's recommendations would improve the PSEP Pipeline Plan and reduce PG&E's baseline forecast request of $1,336 million in ratepayer funding by more than $850 million.[7] In addition, PG&E's request for $271 million for pipeline contingency would be reduced more than 75% due to the above reductions in baseline costs, and a reduction in the contingency rate. It is important to note that a significant portion of this reduction is due to shifting costs from Phase 1 to Phase 2, rather than elimination of costs, or shifting them from ratepayers to PG&E shareholders.

DRA performed a thorough analysis of the PSEP Pipeline Plan which culminated in specific cost reduction recommendations, as though PG&E had submitted a detailed and final estimate. However, the inclusion of detailed cost reduction recommendations should not be perceived as support for authorization of any cost recovery based on this plan. Rather, DRA recommends a process to improve PG&E's PSEP Pipeline Plan, summarized by the following:

1. **Reject PG&E's current PSEP Pipeline Plan** - based on the findings above.

2. **Use DRA findings and recommendations defined in this testimony for future revisions of the PSEP Pipeline Plan**.

3. **Expedite a revised and vetted test plan for the first half of 2012** – use a streamlined CPUC process to vet projects to be initiated after the 2012 winter heating season, but prior to the summer cooling season.

[7] DRA's primary cost recovery recommendations are included in Exhibit DRA-02 and supersede all other related cost recovery recommendations found in the DRA Exhibits DRA-03 through DRA-09.

4. **Initiate work in 2012 required to develop a long term PSEP Pipeline Plan** – including proceeding with the order instituting ratemaking (OIR) process, MAOP validation, and the HCA order instituting investigation (OII).

5. **Redo the pipeline mitigation assignment process, and develop a long-term PSEP Pipeline Implementation Plan for all transmission** segments – incorporate the findings from 2012 work described in recommendation 3 to ensure the resulting plan is robust, safe, and cost-effective.

C) Valve Automation; Interim Safety Enhancement Measures; PSEP Management Approach (Exhibit DRA-07)

DRA finds that approximately $55 million (of PG&E's $144 million request) to be a reasonable cost forecast for implementing the priority valve automation projects included in PG&E's PSEP. DRA recommends that the scale of the valve automation program in phase 1 of PG&E's PSEP to include funds to enhance its Supervisory Control and Data Acquisition ("SCADA") system, install new flow meters and remote valve position indicators, automate existing valves, and to install automatic valves on pipelines that cross active earthquake faults. This approach would be consistent with existing laws and regulations. Other valves enhancement projects recommended by PG&E should be re-evaluated in a future phase of the PSEP or the next GT&S rate case because they are above and beyond the requirements of D.11-06-017, and its cost estimates are highly uncertain at this time.

PG&E's proposed PSEP includes interim safety measures that will apply to specific pipeline segments to increase public safety prior to completion of pressure testing or replacement work. In general DRA supports these measures though DRA disagrees with PG&E on the need for four additional senior gas engineer positions to meet pressure reduction requirements. DRA finds that PG&E has not adequately justified the necessity for these additional positions. Also, various reports that PG&E has filed with the Commission in this proceeding, demonstrate that PG&E is already meeting its pressure reduction requirements without the addition of the four senior gas positions.

DRA does not object to PG&E's request for Program Management Office (PMO) funding at this time. DRA considers a strong PMO function that establishes clear goals, scope, responsibilities, reporting requirements, with strong management support, to be a vital requirement for successfully managing PG&E's PSEP.

D) Pipeline Records Integration Program (Exhibit DRA-08)

PG&E forecasts a total cost of $285.9 million[8] for its Pipeline Records Integration Program (PRIP) for the period of 2011 through 2014, and is requesting that $222.8 million of the $285.9 million be funded by ratepayers. PG&E's request is composed of a Maximum Allowable Operating Pressure (MAOP) Records Validation Project and a Gas Transmission Asset Management (GTAM) Project.[9] DRA recommends that PG&E's request for additional ratepayer funding of $222.8 million for its PRIP be completely denied for the following reasons.

- PG&E has failed to accurately and completely record and maintain detailed information about the components making up its 6,761 miles of gas transmission pipe for 30 years. PG&E's forecast estimates cannot be substantiated, its bottoms-up estimating method is inappropriate, and its Geographic Information System (GIS) data associated with its gas transmission pipeline system is unreliable.[10]
- Incremental funding for the PRIP that PG&E requires over and above what has already been authorized in its 2011 General Rate Case (GRC) and its 2011 Gas Transmission and Storage (GT&S) proceeding should be funded by PG&E's shareholders.
- In its next GRC, PG&E should be able to demonstrate that it has utilized and incorporated historical embedded costs to perform activities associated with its PRIP. PG&E's historical expenses include costs for closed and completed Informational Technology projects (IT), on-going, normal, and routine maintenance activities for gas transmission recordkeeping and existing database systems, and IT upgrades, revisions, database consolidations, and IT mobile devices.
- In its next GRC, PG&E should be required to demonstrate all savings associated with reduced staff time to perform various gas transmission recordkeeping

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[8] Id., p.5-4, Table 5-1.

[9] Id., p.5-1.

[10] PG&E provided the methodology it utilized to calculate the forecast for its MAOP Records Validation Project and its GTAM Project in its response to DRA data request DRA-TLG-1, question 1-h.

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maintenance activities discussed in its testimony in this proceeding and related efficiency gains and clearly identify all estimated ratepayer savings and benefits associated with its PRIP.

- In its next GRC, PG&E should be required to demonstrate that it has tracked each specific PRIP cost, maintained detailed documentation to trace and verify the accuracy of each cost, provide the status on the process and progress of addressing and correcting all deficiencies in its GIS system and pipeline records program, so that PG&E will be fully prepared for a reasonableness review.

E) REVENUE REQUIREMENTS, COST ALLOCATION AND RATES (EXHIBIT DRA-09)

DRA has analyzed PG&E's PSEP proposals on the revenue requirements, cost allocation and rate design proposals, including rate of return. Consistent with DRA's cost recovery proposal in Exhibit DRA-02, DRA offers the following recommendations:

1. The Commission should order that PG&E shareholders absorb all PSEP expenses for the 2011-2014 period and to authorize PG&E's rate recovery of PSEP expenses starting only in the year 2015 going forward.
2. With respect to capital expenditures for the PSEP, the Commission authorize PG&E cost recovery for capital additions relating only to pre-1955 pipeline replacements at an ROR reduced by 200 basis points, and to start such cost recovery only in the year 2015. But for pipeline installed after 1955, PG&E should receive no return on rate base for those plant additions.
3. The Commission should deny PG&E's request for incremental cost recovery of PSEP costs in PG&E's rates through a new Gas Pipeline Safety ("GPS") rate component.[11] Instead, PG&E's future PSEP revenue requirements should be fully integrated into PG&E's gas transmission pipeline and storage rates and considered by the Commission in the next GT&S rate case cycle after the GA V period ends in 2014.

[11] PG&E Prepared Testimony in R.11-02-019 dated Aug.26, 2011, p.10-4 (updated with Errata on Nov. 4, 2011). The total requested revenue requirements do not change with the Errata.

4. The Commission reject PG&E's proposal for balancing accounts and memorandum accounts relating to the PG&E PSEP consistent with DRA's recommendation for no incremental cost recovery for PSEP costs.

5. The Commission should reject PG&E's proposal for no reasonableness review as this would be inappropriate and inconsistent with holding PG&E accountable for its actions and management of ratepayer funds.

Based on the analysis and recommendations of DRA's witnesses with respect to the various program components of PG&E's PSEP, DRA's recommendations will result in substantial cost savings for each year over the period 2011 through 2014.[12] If DRA's recommended changes to PG&E's PSEP are adopted, then the PG&E PSEP cost should go down to the total amount of $621 million instead of PG&E's PSEP cost of $2.2 billion.[13] DRA's recommendation on the PSEP would represent a 72% reduction to PG&E's PSEP Phase 1 costs.

In response to the Commission's Amended Scoping Memo in this rulemaking, DRA shows the revenue requirements that result from DRA's recommended changes to the PG&E PSEP so that a proper comparison can be made to the Respondent's proposal. The annual revenue requirements should go down to $151.8 million instead of PG&E's revenue requirements of $992.9 million over the 2011-2014 period, or an 85 percent reduction with DRA's adjustments to the PSEP.

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[12] DRA's primary cost recovery recommendations are included in Exhibit DRA-02 and supersede all other related cost recovery recommendations found in the DRA Exhibits DRA-03 through DRA-09. DRA's comparative analysis of PG&E's PSEP Phase 1 Forecast of Total Expenses & Capital Expenditures with DRA's recommended PSEP changes is responsive to the Commission's Amended Scoping Memo request for parties to address the reasonableness of the utilities Implementation Plans and the associated cost estimates, in regards to revenue requirements.

Total Expenses & Capital Expenditures analysis of PG&E's PSEP Phase 1

[13] See Tables 8-1, 8-2, and 8-3 in PG&E Prepared Testimony, shown on pp. 8-3 and 8-4. See also Tables 7-1 and 7-2 in PG&E Pipeline Replacement Or Testing Implementation Plan filing in R.11-02-019, p.45.