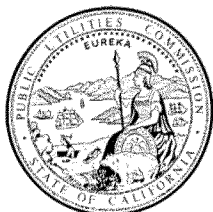


Docket: : Final v1.00
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Commissioner : M Florio
Admin. Law Judge : Yip-Kikugawa
Sponsoring : Dr. Paul Duller and
Witnesses. : Ms. Alison North

1
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**Consumer Protection and Safety Division
California Public Utilities Commission**

**Rebuttal Testimony to
Pacific Gas and Electric Company's
Response to the Consumer Protection and
Safety Division's Report: Records Management within
the Gas Transmission Division of PG&E prior to
the Natural Gas Transmission Pipeline Rupture and
Fire, San Bruno, California September 9, 2010.**



San Francisco, California
August 20, 2012

3

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1. Executive Summary

The purpose of this rebuttal testimony is to provide an assessment of PG&E's Response testimony served on June 27. Consumer Protection and Safety Division ("CPSD") details the mischaracterizations, inconsistencies, contradictions and admissions embedded in Pacific Gas and Electric Company ("PG&E") testimony and identifies PG&E's own findings to confirm the regulatory violations of deficient recordkeeping that CPSD made and discussed in its March 2012 testimony.

The additional evidence provided by PG&E to CPSD since March 2012 and during the preparation of this Rebuttal Testimony provides further support to CPSD's original findings, namely that PG&E's record keeping practices have been deficient and have diminished pipeline safety. While additional facts are presented to rebut PG&E's specific records management allegations, we raise no new alleged violations in this testimony.

This Rebuttal Testimony also discusses and refutes records management defenses that PG&E has raised in its Response testimony served on June 27.

First, with respect to PG&E's claim that CPSD has applied subjective and comparatively new measures that are incompatible with a backward-looking penalty investigation, we point out that the Generally Accepted Recordkeeping Principles (GARP) used by CPSD are firmly rooted in information management best practices and long-standing US Federal law and case law. Legal precedent abounds, in particular, for the principles of accountability integrity, and compliance.¹ GARP was selected for use in CPSD testimony as a framework and reporting tool to illustrate our findings in a clear and consistent manner that could be understood by the Commission, by the Law Judge, by all parties in this proceeding, and by any records manager in the US.

Second, with respect to records retention, Section 4.2 of this rebuttal testimony explains and documents that PG&E represented to CPSD that one group of retention schedules, in its June 20, 2011 filing, and subsequent data responses contained a complete set of retention requirements. CPSD then relied upon that set to perform its analysis in its March 12 opening testimony. Section 4.2 then explains that the additional retention schedules and requirements that PG&E's records management witness Ms. Dunn introduces in her response testimony, were not part of the group that PG&E represented as complete.

¹ Montana, John (2009) GARP Mapping a route for compliance, page 10-12. In: Hot Topic, Taking a closer look at ARMA International's Generally Accepted Recordkeeping PrinciplesSM, 16pp.

1 Also with respect to records retention, Section 5.5 of this report details the various ways
2 in which CPSD's GARP® evaluation is substantially more comprehensive than that of Ms.
3 Dunn. CPSD maintains that the scope and measure of its GARP® evaluation of PG&E's records
4 retention provided in its March 12 opening testimony are accurate and necessary.
5

6 Third, several sections of this rebuttal address PG&E's response testimony regarding its
7 job files. Section 4.1 captures PG&E's scattered responses to overarching Violation A.1,
8 identified in CPSD's supplemental opening testimony. Sections 5.6 through 5.17 address
9 PG&E's response testimony regarding job files. PG&E's deficiencies with maintaining job files
10 constitute a significant portion of the overarching Violation A.1.
11

12 In PG&E's recent TV commercial, PG&E Chief Executive, Tony Earley admits that
13 when he joined PG&E the company had "*Lost its Way*". Our original testimony expands upon
14 Mr. Earley's admissions. We agree with Mr. Earley that the company had lost its way, certainly
15 as far as records management was concerned, and maintain that its gas transmission division had,
16 for many years, lost control of, misplaced and/or destroyed essential safety critical records.
17

18 We do not dispute that PG&E is undergoing a paradigm shift in its approach to records
19 management triggered by, the events of 2010. However, the testimony presented by PG&E
20 addressing what it has done since the San Bruno event does not justify its past conduct.
21 Moreover, this is an adjudicatory proceeding addressing PG&E's past conduct, not its present or
22 future conduct.² Similarly, as records managers working on safety matters we cannot accept
23 PG&E's claim and defense that other operators' safety recordkeeping may also have been
24 deficient. This matter is addressed succinctly in the Rebuttal Testimony presented by Julie
25 Halligan.³
26

27 In a forward to the book 'Information Nation'⁴ Jay Cohen stated that "*Time and time*
28 *again, Information management compliance failures have proven to be devastating, laws are*
29 *broken, data is not protected, and systems are overburdened. Organizational mismanagement of*
30 *information is far too commonplace today and we are now reeling – trying to figure out what to*
31 *do next*".
32

² The only exception to this is where PG&E's future remedial efforts relate to its past deficiencies.

³ I.11-02-016 Rebuttal Testimony of Julie Halligan, CPSD.

⁴ Kahn, R.A. and Blair, B.T. (2004) Information Nation: Seven keys to Information Management Compliance, AIIM Publication. 301pp (ISBN 0-89258-402-5).

1 PG&E had a statutory obligation to ensure that procedures for retaining official records
2 are formally documented, widely disseminated, and properly understood and enforced, as with
3 any other PG&E information management policy or procedure. PG&E failed to employ adequate
4 records management practices to safeguard the records in its care. PG&E processes for
5 controlling documentation did not ensure that its records were traceable, verifiable or complete,
6 and as such safety was put at risk. In addition, PG&E's haphazard and uncoordinated approach
7 to records management and document retention indisputably denied CPUC potential evidence to
8 establish facts in this dispute.

9
10 After careful review of PG&E's Response testimony and Data Responses, we maintain
11 that CPSD's March 2012 testimony, findings and asserted violations remain valid.
12

1 **2. Introduction**

2
3 In its September 2011 final report⁵ on the San Bruno pipe rupture and fire, the National
4 Transportation and Safety Board (NTSB) concluded: “*The multiple and recurring deficiencies in*
5 *PG&E operational practices indicate a systemic problem*” and “*PG&E’s pipeline integrity*
6 *management program, which should have ensured the safety of the system, was deficient and*
7 *ineffective because it was based on incomplete and inaccurate pipeline information.*”
8

9 The CPSD March 2012 testimony⁶ is consistent with the findings and conclusions of the
10 NTSB, an Independent Review Panel, and much of PG&E’s own testimony, and provides
11 evidence of the record keeping failures within PG&E’s Gas Transmission Division which have
12 diminished pipeline safety. Many of these failures give rise to general records management
13 violations, records retention violations and other safety/pipeline integrity record violations, as
14 detailed in the CPSD March 2012 supplemental report.⁷
15

16 CPSD has reviewed PG&E’s June 2012 Response testimony in detail. PG&E’s
17 testimony together with the Data Responses provided by PG&E to CPSD since March 2012
18 further support to CPSD’s original findings, namely that PG&E’s recordkeeping practices have
19 been deficient and have diminished pipeline safety.
20

21 This report rebuts PG&E’s findings, details the inconsistencies, contradictions and
22 admissions embedded in PG&E’s own testimony, and reinforces CPSD’s original findings.
23
24
25
26
27
28

⁵ National Transportation Safety Board. 2011. Pacific Gas and Electric Company Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California, September 9, 2010. Pipeline Accident Report NTSB/PAR-11/01. Washington, DC, .pp. xi and 118

⁶ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

⁷ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5pp.

3. List of Admissions

3.1. Direct Admissions in PG&E's Testimony

Most of the fundamental records management issues identified in the CPSD March 2012 testimony⁸ are not explicitly denied by PG&E. In fact, PG&E make a number of important admissions in its testimony that illustrate the records management concerns and issues raised by CPSD's original report. The important records management admissions made by PG&E in their testimony and data responses are as follows:

1. *The CPSD Report identifies legitimate areas of present-day records management concern, concerns that PG&E shares and is addressing.*⁹
2. *"PG&E acknowledges that it faces a number of records-related challenges".*¹⁰
3. *PG&E recognizes that it has not located some historic pipeline records, including strength test reports that should have been retained.*¹¹
4. *In retrospect, the company wishes it had retained the pipeline history files.*¹²
5. *PG&E recognizes that its recent records management practices have come up short.*¹³
6. PG&E's CEO, Tony Earley stated that *"PG&E had some real problems and issues"* and commented that *"I think other companies did a better job in tracking even their manual records"*.¹⁴

⁸ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172 pages.

⁹ PG&E Response Testimony Page 0-1-16

¹⁰ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07 CPUC Data Request 71, Question 7

¹¹ PG&E Response Testimony Page 1-1-20

¹² PG&E Response Testimony Page 2-23-3

¹³ PG&E Response Testimony Page 1-1-21

- 1
- 2 7. Post San Bruno, PG&E “has already initiated many records management
- 3 *improvements aimed at addressing its records management and asset*
- 4 *knowledge weaknesses”.*¹⁵
- 5
- 6 8. *PG&E recognizes that it needs to improve its records and information*
- 7 *management practices at an enterprise level and within its gas*
- 8 *transmission organization.*¹⁶
- 9
- 10 9. *Going forward PG&E’s records must be able to deliver real time and*
- 11 *accurate (traceable, verifiable, and complete) information about its gas*
- 12 *pipeline system.*¹⁷
- 13
- 14 10. *PG&E intends to address the Records Management assessment*
- 15 *recommendations it received earlier this year for its external records*
- 16 *management consultant, PricewaterhouseCoopers (PwC).*¹⁸
- 17
- 18 11. *PG&E’s gas organization has taken strides to enhance its asset knowledge*
- 19 *and records management practices. It has created a new Asset Knowledge*
- 20 *Management organization to oversee the records verification and MAOP*
- 21 *Validation efforts, develop a gas distribution geospatial information*
- 22 *system, perform timely updates of the mapping systems as gas facilities are*
- 23 *installed or modified, ensure data quality, and implement advanced*
- 24 *technology improvements.*¹⁹
- 25
- 26 12. *In a recent PG&E study of 100 non-destructive examination excavations*
- 27 *field-verified data were compared to PG&E’s records for Wall Thickness*
- 28 *(WT) and/or Longitudinal Weld Seam (LS) accuracy. “Out of all records*
- 29 *reviewed, 20% were found to be inaccurate record specifications, and two*
- 30 *instances impacted the MAOP of the line negatively”.*²⁰

¹⁴ http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf

¹⁵ PG&E Response Testimony Page 1-1-26

¹⁶ PG&E Response Testimony Page.1-19-3

¹⁷ PG&E Response Testimony Page. 1-19-6

¹⁸ PG&E Response Testimony Page 1-19-18

¹⁹ PG&E Response Testimony Page 1-21-7

²⁰ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch01

1
2 13. PG&E is aware that there is a direct “*correlation between document quality*
3 *and specification accuracy*”.²¹
4

5 14. PG&E is “*aware that data errors exist within the current GIS system,*
6 *either from original pipeline data or introduced during the transfer*”²² and
7 that it does not believe that its current GIS system is accurate or complete
8 or that it contains a full set of required information for all numbered gas
9 transmission lines.²³
10

11 15. *Enhanced GIS is being built from the ground up by leveraging PFL*
12 *(pipeline feature list) data rather than the data that is used to populate the*
13 *existing GIS.*²⁴ Note: this highlights that data quality issues within PG&E’s
14 existing GIS render the existing data unusable within the new system.
15

16 16. *PG&E’s consolidation project (Project Mariner) will eliminate the large*
17 *number of disparate and largely uncoordinated data systems (IGIS, GIS*
18 *2.0, EDMS, ECTS, PSRS, Gas FM, PLM) that currently exist within the*
19 *company.*²⁵
20

21 17. In a recent press conference²⁶ PG&E’s CEO, Tony Earley stated that:
22 “*these pipelines were built in the 1950’s, 1960’s, and from my experience,*
23 *recordkeeping back then was not as detailed, obviously you didn’t have*
24 *electronic records, so it was all manual. PG&E had some real problems*
25 *and issues*” - “*I think other companies did a better job in tracking even*
26 *their manual records*”.
27

28 18. *PwC leveraged a host of records and information management standards*
29 *and guidelines, including GARP, to assess PG&E’s gas operations current*
30 *state practices.*²⁷
31

²¹ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch01

²² PG&E Response Testimony Page 3-66-26

²³ GasTransmissionSystemRecordsOII_DR_CPUC_067_Q13 CPUC Data Request 67, Question 13

²⁴ PG&E Response Testimony Page 1-22-25

²⁵ PG&E Response Testimony Page 1-28-3

²⁶ Transcript - http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf

²⁷ PG&E Response Testimony Page 1-29-7

1
2 19. PG&E has had some form of records retention program in place since at
3 least 1938. The program has had some (albeit basic) audit and oversight
4 features. It has taken into account how records were used and stored within
5 the Company's different organizations.²⁸
6

7 20. Historically PG&E used different names for different types of guidance
8 documents, including: Policies, Standards, Design Standards, Guidelines,
9 Work Procedures, Bulletins, Forms and Manuals. Beginning in July 2010,
10 PG&E began a gradual process to convert many of these documents to a
11 standardized naming convention, format, content, and organization.²⁹
12

13 21. PG&E agrees that it needs to incorporate better and stronger audit
14 oversight features into its records retention program.³⁰
15

16 22. PG&E's 2008 internal audit of data management practices found that
17 within the company "many business leaders, systems owners, and
18 compliance champions do not have any data retention procedures in place,
19 do not monitor compliance with the data retention policies or periodically
20 confirm that the specified retention periods are still valid, and have
21 experienced issues concerning obsolete data in key systems they use".^{31, 32}
22

23 23. PG&E's Emeryville facility now serves as a central repository for many
24 (but not all) gas transmission pipeline construction and testing records.³³
25

26 24. PG&E state that "the use of recondition pipe without specific inspection
27 practices was common within the gas industry in the late 1960s".³⁴
28

29 25. PG&E did not in the past capture data identifying reconditioned pipe in the
30 gas transmission system in its databases.³⁵

²⁸ PG&E Response Testimony Page 2-3-4

²⁹ PG&E Response Testimony Page 2-5-11 (footnote 8)

³⁰ PG&E Response Testimony Page 2-11-14

³¹ PG&E Response Testimony Page 2-13-17

³² PG&E Response Testimony Exhibit 2-28

³³ PG&E Response Testimony Page 2-19-13

³⁴ PG&E Response Testimony Page 3-12-21

1
2 26. PG&E acknowledges that with respect to job files *even though there were*
3 *procedures in place, they were not always consistently followed.*³⁶
4

5 27. PG&E acknowledges that “prior to San Bruno, it did not have a system
6 *wide index of all its pipeline job files*”.³⁷ In addition “SAP and GIS both
7 *provide significant job file information, but neither system was*
8 *comprehensive. Other tools existed such as Docutrack, but they too were*
9 *not comprehensive.*³⁸
10

11 28. “PG&E relied heavily on a sometimes cumbersome retrieval process that
12 *involved the potential of several searches for relevant documents*”.³⁹
13

14 29. PG&E “acknowledges the importance of thorough and complete data
15 *gathering*” and (since San Bruno) “*have implemented several processes to*
16 *enhance the quality of our pipeline specification, maintenance and*
17 *operational data*”.⁴⁰
18

19 30. PG&E does “recognize the importance of making leak records more
20 *accessible*” and “*ha(s) undertaken an effort to gather and digitize all*
21 *hardcopy records in a central database.*⁴¹
22

23 31. In parts of its testimony PG&E states that the GIS “(. . . *is not our system of*
24 *record for pipeline records) and did not replace engineering records*”.⁴²
25 However, elsewhere they state that the GIS database “*serves as a primary*
26 *source of information in the integrity management program*”.⁴³
27

³⁵ PG&E Response Testimony Page 3-28-19

³⁶ PG&E Response Testimony Page 3-38-18

³⁷ PG&E Response Testimony Page 3-38-24

³⁸ PG&E Response Testimony Page 3-38-28

³⁹ PG&E Response Testimony Page 3-38-32 to 3-39-2

⁴⁰ PG&E Response Testimony Page 3-53-17

⁴¹ PG&E Response Testimony Page 3-64-8

⁴² PG&E Response Testimony Page 3-66-14

⁴³ PG&E Response Testimony Page 3-54-3

1 32. PG&E “cannot conclusively document the origin of the pipe used in the
2 construction of segment 180”⁴⁴ and that “segment 180 job file documents
3 do not foreclose the possibility that some of the pipe used on the segment
4 180 job may have been reconditioned pipe”.⁴⁵
5

6 33. PG&E acknowledges that the construction records it has located for
7 segment 180 do not contain documents or drawings that depict the segment
8 180 installation in granular detail.⁴⁶
9

10 34. PG&E states that “through its MAOP validation effort, PG&E is collecting
11 and cataloguing information to identify reconditioned pipe in its system.
12 PG&E expects that a catalog of reconditioned pipe that can be identified
13 throughout PG&E’s gas transmission system will be available at the
14 conclusion of this effort, currently estimated to be completed by early
15 2013”.⁴⁷
16

17 35. PG&E has not located records showing that the post-installation pressure
18 test was conducted and segment 180.⁴⁸
19

20 36. PG&E’s search for operating pressure records from 1965-1970 revealed
21 that many of the underlying records that had been reviewed in 1973-1975
22 for grandfathered pipelines were no longer available.⁴⁹
23

24 37. Historical pipeline information was originally recorded on pipeline density
25 survey sheets. However, the original pipeline density survey sheets used to
26 populate the pipeline survey sheets in the early 1970s have not been
27 located”.^{50,51}
28

⁴⁴ PG&E Response Testimony Page 4-1-11

⁴⁵ PG&E Response Testimony Page 4-2-6

⁴⁶ PG&E Response Testimony Page 4-4-23

⁴⁷ PG&E Response Testimony Page 4-4-17 (footnote 9)

⁴⁸ PG&E Response Testimony Page 4-6-9

⁴⁹ PG&E Response Testimony Page 4-9-19

⁵⁰ GasTransmissionSystemRecordsOII_DR_CPUC_045_Q7 Data Request 45, Question 7

⁵¹ The Pipeline survey sheets formed the source material used to populate PG&E’s current GIS, in preference to obtaining the information directly from the original job files.

1 38. Nick Stavropoulos, PG&E's executive vice president of gas operations,
2 noted the "monumental progress" that the company has made in the past
3 two years and stated that "PG&E has made and continues to make large-
4 scale changes to how it does its business. New leaders have arrived.
5 Industry best practices have been benchmarked and embraced.
6 Departments have been re-organized, dismantled and created. Procedures
7 and protocols have been reviewed and improved."⁵²
8

9 39. PG&E was asked what information and records management
10 committees/councils it had looking at information and records
11 management. PG&E has responded that it is currently "unaware of any
12 information and records management committees or councils that, prior to
13 the San Bruno incident, looked at information and records management
14 issues between 1955 and 2010".⁵³
15

16 40. "Practical challenges with respect to document storage, relocation and
17 inadvertent destruction or misplacement have contributed to the records
18 gaps that PG&E and operators throughout the industry confront".⁵⁴
19

20 41. With regards to the PricewaterhouseCoopers ("PwC") assessment of the
21 gas transmission division reports PG&E states that "PG&E does not
22 question CPSD's ability to access such information"⁵⁵ with the caveat that
23 "PG&E neither accepts nor rejects observations set forth in these draft and
24 preliminary documents"⁵⁶
25

26 42. PG&E accepts that the final report⁵⁷ and recommendations of its
27 consultants (PwC) assessment of Gas Operations Records and Information
28 Management "were based on their observations about the state of the Gas
29 Transmission Organization's records management practices at the time the
30 assessment was conducted" (Nov 2011 to Feb 2012).⁵⁸

⁵² <http://www.pgecurrents.com/2012/07/06/pge-taking-important-steps-to-ensure-pipeline-integrity/>

⁵³ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q02, CPUC Data Request 066, July 11, 2012

⁵⁴ PG&E Response Testimony Page 4-5-8

⁵⁵ PG&E Response Testimony Page 1-29-6 (footnote 30)

⁵⁶ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07

⁵⁷ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp04Atch01. Gas Operations Records and Information Management Assessment. Internal Report produced by PwC. March 31st 2012

⁵⁸ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07

1
2 43. In its final report⁵⁹ (Feb 2012) PwC observed that within PG&E Gas
3 Operations:

- 4 • *“There is little formal RIM [Records and Information Management]*
5 *Governance”.*
- 6 • *“Information is often incomplete, unreliable, and not fully*
7 *traceable”.*
- 8 • *“Clearly defined RIM procedures and quality controls are lacking*
9 *within key work processes”.*
- 10 • *“Employees have challenges easily and efficiently identifying and*
11 *accessing key records for their work”.*
- 12 • *“There is a lack of clear standards, work procedures, and training*
13 *for how staff should create, manage, transfer, store, and dispose of*
14 *records and information”.*
- 15 • *“Existing processes are very manual, heavily paper-based, and may*
16 *differ between different office locations”.*
- 17 • *“There are numerous and disparate technology applications and*
18 *systems where data is stored in parallel to paper-based records”.*
- 19 • *“Both paper and electronic populations contain gaps and errors”.*
- 20 • *“Information is not managed throughout its lifecycle; nor is it*
21 *managed as a corporate asset”.*
- 22 • *“Opportunities for improvement for Gas Operations center around*
23 *a cultural shift in the way people approach Governance,*
24 *Information Quality and Controls, and clearly defined Standards as*
25 *they pertain to Records and Information Management”.*

26
27 Additional information regarding PwC’s detailed findings is presented in Appendix 1 of this
28 report.
29

⁵⁹ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp04Aтч01. Gas Operations Records and Information Management Assessment. Internal Report produced by PwC. March 31st 2012.

4. Specified Violations and PG&E's Response to CPSD

CPSD's opening⁶⁰ and supplemental testimony⁶¹ identify the fundamental flaw that PG&E has not maintained traceable, verifiable or complete records for an extended period of time. Apparently, PG&E needed reminding of this point when it asked CPSD, "*Is it your contention that the 'traceable, verifiable and complete' standard applied within the natural gas pipeline transmission industry in the United States prior to the NTSB's January 3, 2011 safety recommendations? If so, please provide the facts and law you rely upon to support your contention?*"⁶² CPSD dutifully informed PG&E of the words of the Pipeline Hazardous Materials Safety Administration:

*"On January 10, 2011, PHMSA (Pipeline Hazardous Materials Safety Administration) issued Advisory Bulletin 11-01.⁶³ This Advisory Bulletin reminded operators that if they are relying on the review of design, construction, inspection, testing and other related data to establish MAOP and MOP, they must ensure that the records used are reliable, traceable, verifiable, and complete."*⁶⁴

Reliable, traceable, verifiable and complete records are also necessary for PG&E to promote the safety of its gas transmission system. The CPSD opening report has provided an overview of PG&E's inherent deficiencies in achieving this. It accompanies the opening testimony of Margaret Felts, which provides specific and detailed examples of these deficiencies. With that theme in mind, this rebuttal testimony clarifies and responds to PG&E's testimony submitted June 27, on a violation by violation basis. It also provides some clarification about general record keeping issues raised by PG&E's testimony.

⁶⁰ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172 pages.

⁶¹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5 pages.

⁶² PG&E Data Request 006, Question 4.

⁶³ The link to PHMSA Advisory Bulletin 11-01 is:

http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Federal%20Register/Pipeline/A_DB-11-01-2.pdf

⁶⁴ CPSD's Supplemental Data Response to PG&E Data Request 6 Question 4.

1 **4.1. Violations A.1: General Records Management Violations**

2 PG&E states that the CPSD testimony supplement “*asserts a general records*
3 *management violation (A.1), portions of which touch on records retention topics.*”⁶⁵ PG&E
4 identifies that Chapter 2 responds to violation A.1 in Chapter 2, asserting that it addresses the
5 contention that PG&E failed to maintain Pipeline History Files.⁶⁶ PG&E goes on to clarify that
6 Ms. Dunn evaluates the sufficiency of CPSD’s analysis that underpins the general records
7 retention violation (A.1).⁶⁷ PG&E correctly notes that Violation I.A.1 of the CPSD report cites
8 generally to Chapters 6 and 7 of their testimony.⁶⁸ PG&E further characterizes these as
9 allegations that are “*wide-ranging and tied only loosely to stated violations*”.⁶⁹

10
11 Violation A.1 is an overarching violation that represents CPSD’s analysis of PG&E’s
12 records management deficiencies in Chapters 6 and 7 of its report. In scattered form, PG&E has
13 attacked Chapters 6 and 7 of the CPSD report throughout much of its Response Testimony. This
14 rebuttal testimony clarifies and identifies the flaws with PG&E’s responses as a general means of
15 supporting Violation A.1.

16
17 **4.2. Violations B.1 to B.6: Records Retention Related Violations**

18
19 The following section groups CPSD’s rebuttal to PG&E’s response on violations B.1 to B.6.

20
21 PG&E asserts that it responds to the six violations that the supplement⁷⁰ to the CPSD
22 report⁷¹ identifies (Violations B.1 to B.6 in CPSD Supplemental testimony).⁷² As support for its
23 response, PG&E further claims that it provides key features of PG&E’s historic records retention

⁶⁵ PG&E Response Testimony Page 2-1 line 8

⁶⁶ PG&E Response Testimony Page 2-2 line 1

⁶⁷ PG&E Response Testimony Page 2-2, line 8

⁶⁸ PG&E Response Testimony Page 3-35 footnote 27

⁶⁹ PG&E Response Testimony Page 3-35 line 2

⁷⁰ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5pp.

⁷¹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172 pages.

⁷² PG&E Response testimony pages 2-1 to 2-2

1 standards and practices.⁷³ The CPSD report provided a similar set of PG&E’s historic records
2 retention standards and practices for context. However, PG&E’s account is merely context and
3 does not refute Violations B.1 to B.6.

4
5 PG&E finally refers to Ms. Dunn’s testimony to evaluate the sufficiency of CPSD’s
6 analysis underpinning violations B.1-B.6 of the CPSD supplemental testimony.⁷⁴ Dunn’s
7 testimony asserts that CPSD missed a group of PG&E’s retention policies. Specifically, her
8 testimony alleges that “*The CPSD Report fails to provide real insight into PG&E’s records*
9 *management program over time. The alleged violations found by CPSD’s experts are based on*
10 *an incomplete review of the existing documents, focusing solely on the centrally-issued records*
11 *retention schedules and ignoring the standard practice documents.”⁷⁵ In fact, the scope of the*
12 *CPSD analysis relied upon PG&E’s June 20, 2011 filing for notice. In the introduction to that*
13 *filing, PG&E identifies Utility Standard Policy (USP) 4 and its underlying documents as a set of*
14 *retention schedules. Specifically, PG&E tells the reader to review one group of documents.⁷⁶*
15 *PG&E’s filing goes on to identify its primary policies associated with record retention periods*
16 *for gas transmission pipeline, which include documents P2-227, P2-228, P2-230 and P2-233.⁷⁷*

17
18 Nonetheless, to ensure CPSD was thorough, it asked PG&E to, “*Provide standard*
19 *practices and retention schedules used by PG&E since 1948 that relate to any aspect of the*
20 *management of either physical or electronic records.”⁷⁸ In response, PG&E identified a *second*
21 *and different group (“second group”)* of documents for retention requirements from 1955-
22 2010.⁷⁹ In reliance on PG&E’s statements, this was the range of documents that CPSD used to
23 examine PG&E’s records retention requirements.⁸⁰*

⁷³ PG&E Response testimony page 2-2 line 2

⁷⁴ PG&E Response testimony page 2-2, line 8

⁷⁵ Maura Dunn Testimony, MD-69 line 33 to MD-70 line 3

⁷⁶ PG&E Response, June 20, 2011, Page 2-1 lines 6 to 22 and footnote 2 reference P2-1 through P2-190

⁷⁷ PG&E Response, June 20, 2011, Page 2A-5, Table 2A-1

⁷⁸ CPSD Data Request 25, Question 2(g), sent to PG&E November 10, 2011

⁷⁹ PG&E Response to CPSD Data Request 25, Question 2(g) submitted to CPSD on January 3, 2012; Here, PG&E said “Attachment 2A to Chapter 2A of PG&E’s June 20, 2011 Filing in I.11-02-016, at pages 194-199, summarizes PG&E’s various record retention policies and practices from 1955 through 2010”. That section states at the top, “The policies below relate to PG&E’s record retention and disposal practices. They begin in 1955 and are in effect through 2010.” The documents identified in that section range from P2-191 to P2-233.

⁸⁰ Indeed, the CPSD report Appendix 7 explains the evolution of PG&E’s records retention standard practice and compares it with industry standards and regulations based upon these documents identified by PG&E.

1 PG&E’s response testimony alleges the CPSD report missed yet a *third and separate*
2 *group* of retention requirements additional group of retention requirements it failed to identify
3 when asked.⁸¹

4
5 Finally, Ms. Dunn’s testimony claims the CPSD report missed other retention
6 requirements, but fails to reference the source of them, giving the reader no means of checking
7 her assertion.⁸² Moreover, CPSD asked PG&E to provide all of its *individual* record retention
8 guidelines and schedules.⁸³ In response, PG&E referred to the same “*second group*” of retention
9 schedules mentioned above. These are not part of the retention schedules that Dunn references
10 in her unreferenced retention requirements table on page MD-52.

11
12 **4.3. Violation C1: PG&E selected the wrong year as the upper limit for its Gas Pipeline**
13 **Replacement Program and for assessing the excavation threat to gas transmission**
14 **pipelines**

15
16 CPSD asserts that “*In 2007, PG&E was informed that in 1995 it selected the wrong year*
17 *as the upper limit for its Gas Pipeline Replacement Program (1947 rather than 1948) and for*
18 *assessing the excavation threat to PG&E’s gas transmission pipelines. As a result both line 132*
19 *and line 151 were excluded from PG&E’s 1995 Gas Pipeline Replacement Program. If line 132*
20 *had been included in this program and replaced the San Bruno rupture and fire could have been*
21 *avoided*”.⁸⁴

22
23 PG&E believes that CPSD was incorrect in its assertion that “*if Line 132 had been*
24 *included in the Gas Pipeline Replacement Program (GPRP)*⁸⁵ *and replaced the San Bruno*
25 *rupture and fire could have been avoided*”. PG&E state that “*this claim is without merit, as*
26 *segment 180 and sections of Line 132 did not meet other criteria in the GPRP and would not*
27 *have been replaced regardless of the cutoff date*”.⁸⁶ PG state that “*Despite the fact that Line*

⁸¹ PG&E Response testimony, Page 2-24, line 13. Specifically, PG&E response testimony says CPSD report missed documents P2-1149 to P2-1244; and Page 2-24 lines 10 and 11 refer to P2-1325.

⁸² Dunn testimony, MD-52 Untitled Table referencing various governing standard practice numbers without reference to a P2 document to show where these standard practice numbers came from.

⁸³ CPSD Data Request 23, Question 26, submitted November 10, 2011.

⁸⁴ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5pp.

⁸⁵ PG&E’s Gas Pipeline Replacement Program (GPRP) was launched in 1985.

⁸⁶ PG&E Testimony Page 3-52-1

1 132, Segment 180, was constructed in 1956 it would not have been a candidate for replacement
2 under the GPRP”.⁸⁷ PG&E go further in this matter and explicitly state that “Regardless of the
3 upper limit of pipe replacement under GPRP, neither segment 180 nor any other section of Line
4 132 constructed in 1948 using 30-inch pipe would have been considered for replacement under
5 GPRP”.⁸⁸
6

7 PG&E’s testimony on this matter, however, is contradicted in its own evidence. PG&E
8 exhibit 3-19⁸⁹ provides details of PG&E’s 10 year program (1990-2000) to reduce earthquake
9 vulnerability of Gas and Electric systems by the year 2000. This report was originally submitted
10 by PG&E to CPUC on January 11, 1991. Page 41 of this document contains a section on
11 PG&E’s actions regarding ‘Reducing the vulnerability of the gas transmission system’ and
12 provides clear evidence that both Line 109 and Line 132 were to be replaced as part of the Gas
13 Pipeline Replacement Program.
14

15 The PG&E report states: “**Replace transmission pipelines 109 and 132 on the San**
16 **Francisco Peninsula.** Under the Gas Pipeline Replacement Program, the transmission lines 109
17 and 132, which connect the Milpitas terminal with the Potrero load center in San Francisco are
18 being replaced”. The PG&E report also states: “The pipelines selected for the program vary in
19 condition as they approach the upper range of their services lives and replacement was
20 evaluated on age, pipe type, corrosion and pressure factors, weld and joint type, leak history and
21 location”.
22

23 It is clear from PG&E’s own program, submitted to the CPUC in 1991 that Line 132 had
24 indeed met GPRP criteria in order to be designated for replacement, and as such we refute
25 PG&E’s testimony that states “Regardless of the upper limit of pipe replacement under GPRP,
26 neither segment 180 nor any other section of Line 132 constructed in 1948 using 30-inch pipe
27 would have been considered for replacement under GPRP”.⁹⁰
28
29

⁸⁷ PG&E Testimony Page 3-52-13

⁸⁸ PG&E Testimony Page 3-52-23

⁸⁹ PG&E Testimony Exhibit 3-19: Programme for reducing earthquake vulnerability of Gas and Electric systems by the year 2000. Pacific Gas and Electricity, December 1990.

⁹⁰ PG&E Testimony Page 3-52-23

1 **4.4. Violation C2: PG&E was unable to precisely identify which of its pipelines were**
2 **more prone to extensive damage from earthquakes**

3
4 CPSD asserts that *“PG&E’s lack of the necessary accurate and readily locatable gas*
5 *transmission line records meant that it was unable to precisely identify which of its pipelines*
6 *were more prone to extensive damage during some earthquakes and thereby ensure safe pipeline*
7 *operation”*.⁹¹

8
9 PG&E states that the CPSD report⁹² provided few facts to support the claim that PG&E
10 *“lacked the necessary accurate and readily locatable gas transmission records needed to*
11 *precisely identify which of its pipelines were more prone to extensive damage during some*
12 *earthquakes and thereby ensure safe pipeline operation”*.⁹³ We disagree, and here will reiterate
13 the facts and circumstances that support our recordkeeping assertion of a violation.

14
15 CPSD’s concerns stem from the facts that the 1992 Federal Emergency Management
16 Agency (FEMA) report on the earthquake resistant construction of gas pipeline systems
17 concluded that: *“older pipelines, including welded pipelines built before 1950 in accordance*
18 *with quality control standards less stringent than those used currently, as well as segmented cast*
19 *iron pipelines, have been severely damaged”*[by earthquakes].⁹⁴

20
21 PG&E highlights the experience in the 1971 San Fernando Valley earthquake in which
22 the most serious pipeline damage was to an oxyacetylene welded pipeline installed in about 1930
23 to mitigate this matter.⁹⁵ However, PG&E ignores CPSD’s conclusion regarding the importance
24 of having accurate, complete and accessible records for welded pipelines built before 1950,

⁹¹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5pp.

⁹² Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

⁹³ PG&E Response Testimony Page 3-49-9

⁹⁴ Yokel, F.Y. and Mathey, R.G. (1992) Earthquake Resistant Construction of Gas and Liquid Fuel Pipeline Systems Serving, or Regulated by, the Federal Government. Federal Emergency Management Agency, FEMA- 233, July 1992. [CPUC Recordkeeping OII Exhibit No 045]. For complete discussion of this point, see CPSD Report, Page 6-91.

⁹⁵ PG&E Response Testimony Page 3-51-20

1 which includes line 132, installed in 1948. The origin and age of the reconditioned pups that
2 failed in San Bruno, has still to be determined.

3
4 The rationale for the inclusion of this violation in the CPSD supporting testimony is that
5 PG&E lacked accurate and readily locatable records relating to the use and location of
6 reconditioned, reused or salvaged pipe within PG&E's Gas Transmission pipeline network. This
7 is particularly important as the age, specification and weld quality of reconditioned pipe may
8 differ significantly from that of the line it is utilized within. Yet PG&E's GIS 2.0 does not
9 recognize or record the date of reconditioned pipe manufacture or its previous service before
10 reinstallation. These factors also have a direct impact upon pipeline integrity, PG&E's
11 earthquake risk assessment, and PG&E's Dynamic Automated Seismic Hazard (DASH)
12 program⁹⁶, as age of pipe is one of the variables considered in each case.

13
14 CPSD's specific concerns include:

- 15
16 a. PG&E has not maintained any record of the location or use of reconditioned pipe within its
17 gas transmission system.
18 b. PG&E is only now gathering reconditioned and reused pipe data through its MAOP
19 validation efforts. As of January 2012, PG&E had identified 25 instances of re-conditioned
20 pipe in the system, 18 of which did not have date information associated with them.
21 c. While job files may include records that demonstrate the use of reconditioned pipe, the
22 number of misplaced, or missing job files, mean that any assessment by PG&E cannot be
23 100% complete.
24 d. PG&E has lost, misplaced or destroyed their entire collection of historical pipeline records
25 that would have also contained relevant primary information.

26
27 CPSD's concerns are discussed below:

28
29 In his supporting testimony, Caesar De Leon referred to DIMP Guidance "in Elements of
30 a Distribution Integrity Management Plan (*"If practical, the operator should use the best
31 information available to make decisions about what is in the existing system. In some cases, an
32 operator may be unable to determine the materials or characteristics of some of the components
33 of the system. This may be due to lost records, systems gained through mergers or acquisitions
34 without complete records, or other reasons. For example, the year of installation might be used
35 to make such decisions about piping material, joint type, coating type, or repair methods used"*).⁹⁷

⁹⁶ PG&E Response Testimony Page 3-50-23

⁹⁷ PG&E Response Testimony Page 1B-6-1 referencing PG&E Ex 1-16.

1 This guidance, however, makes a fundamental and potentially flawed assumption. Namely it
2 assumes that the piping material is new. Such an assumption fails to take account of systems in
3 which salvaged or reconditioned pipe have been used. This is important as the actual age of the
4 pipe and seam welds, may be significantly older than the installation date, as was likely to have
5 been the case in San Bruno.

6
7 PG&E's incorrect age determination in GIS (by assuming Age of Pipe Installation = Age
8 of Pipe Manufacture, and associated pipeline specifications) can lead to incorrect assumptions
9 regarding the nature of the pipe. This impacts risk assessment, MAOP calculations, integrity
10 analysis, pipeline replacement, and earthquake risk/damage models amongst others. Although
11 'Age of Pipe' and 'Age of Installation' may be similar for new pipe, safety related assumptions
12 become fundamentally flawed when the question of re-use of salvaged or reconditioned pipe
13 enters the equation (e.g. pipe that has already been used in transporting gas under pressure and is
14 then dug up and reconditioned, inspected, tested and declared fit for re-use). Age differences
15 could then extend to 20 years or more. For example, at a prehearing conference PG&E brought
16 up the 1956 reconditioning and re-use of transmission pipe manufactured in 1929. The
17 variations in pipeline and weld quality are likely to be most pronounced, where re-used or
18 recondition pipe manufactured prior to 1950 are in use. This error is then compounded when
19 pipelines are misclassified as seamless when they were seamed, and when records cannot
20 accurately identify or quantify the operating conditions of the pipe either before or after it's re-
21 use.

22
23 The fact PG&E is replacing a significant proportion of the metadata held in their GIS,
24 with new data compiled during the MAOP project, as they move to a new GIS system also
25 indicates PG&E's own lack of confidence in this potentially erroneous data. This is particularly
26 important in PG&E's case, as PG&E has admitted that it did not track the use of reconditioned
27 pipe within its pipeline system.⁹⁸ PG&E is attempting to correct this deficiency and states that it
28 hopes to provide a comprehensive view of the location of reused pipe in its gas transmission
29 system, as identified by the MAOP project, by 2013. However, the completeness and accuracy of
30 the reused pipe location details derived from the MAOP project will be based upon the
31 completeness and accuracy of the pipeline job files reviewed. As we have demonstrated
32 elsewhere in this testimony, we believe that a significant number of job files are missing, and as
33 such this impacts the complete and accurate identification of reconditioned pipe within PG&E's
34 transmission system.

35

⁹⁸ PG&E Response Testimony Page 3-28-19

1 **4.5. Violation C3: PG&E failed to maintain a complete and readily accessible database**
2 **of all gas leaks for their pipeline system**

3
4 CPSD asserts that “PG&E failed to maintain a definitive, complete and readily accessible
5 database of all gas leaks for their pipeline system as it failed to migrate all historical leak
6 information from system to system. The incompleteness of critical leak information has
7 contributed to diminished PG&E pipeline safety”.⁹⁹

8
9 CPSD’s contention is that PG&E’s IGIS leaks database is incomplete and only contains a
10 record of historical leak information from 1999,¹⁰⁰ despite the obligation placed upon PG&E to
11 maintain a complete record of all gas leaks over the life of the asset. This is confirmed by PG&E
12 which stated that in 1999 they failed to migrate approximately 1 million leak records compiled
13 since 1970 and stored on PG&E’s mainframe into its new database as it would decrease the
14 speed and usefulness of its new leak tracking system (IGIS). In PG&E’s words, “Loading the
15 large volume of records in the Mainframe Leaks system (approximately 1,000,000 records)
16 would decrease the speed at which the IGIS system would operate, decreasing its usefulness”.¹⁰¹

17
18 To support its omission to migrate all of the leak data, PG&E states that “the PC Leaks
19 data was structured in a relational database, while the Mainframe Leaks data was not. This
20 relational database format more closely matched the IGIS database structure, and the PC Leaks
21 data was simpler to migrate to IGIS”.¹⁰² PG&E then contradicts itself by stating that “Leak and
22 repair data in PG&E’s Mainframe Leaks database was converted into a Microsoft Access
23 database [a relational database] file after PG&E transitioned to the IGIS program in 1999.
24 PG&E maintains a copy of this file”.¹⁰³ In summary, PG&E claimed that they did not migrate
25 their mainframe data to IGIS because it was not in a relational database format, but then
26 proceeded to transfer their mainframe data to an alternative a PC-based relational database.

27
28 None of PG&E’s statements to date refute CPSD’s contention that PG&E failed to
29 maintain definitive, complete and readily accessible database of all gas leaks for their pipeline
30 system as it failed to migrate all historical leak information from system to system. Moreover,

⁹⁹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Supplement to March 12th Report, Exhibit 2. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 30, 2012, 5pp.

¹⁰⁰ This includes leaks that were flagged as active leaks on the Mainframe at the time of the transfer from PC-Leaks to IGIS.

¹⁰¹ GasTransmissionSystemRecordsOII_DR_CPUC_069_Q06 Data Request 69-Question 6

¹⁰² GasTransmissionSystemRecordsOII_DR_CPUC_069_Q06 Data Request 69-Question 6

¹⁰³ GasTransmissionSystemRecordsOII_DR_CPUC_069_Q05 Data Request 69-Question 5

1 PG&E states that it has documented the discovery and repair gas leaks for 55 years (since 1957).
2 However, it has not maintained leak records for the period prior to 1957, the 44 years since the
3 formation of the utility in 1913.¹⁰⁴

4
5 CPSD notes the absence of over a million records in PG&E's current leak database
6 (IGIS) dating from 1970-1999, the absence of 1957-1969 manually recorded leaks, and
7 unrecorded leak data from before 1957. Given these gaps in leak records, CPSD does not believe
8 it is possible for PG&E to analyze the historical leak data over the full lifetime of any given
9 pipeline. CPSD also does not believe PG&E can review the correlation between the leak data
10 and other pipeline related information (such as age of pipe, location, construction, type of weld
11 etc.) to correctly assess what if any underlying problems exist, their likely cause, and its impact
12 upon pipe inclusion in the GPRP. In addition, the accuracy of leak information that is recorded
13 has been placed at issue by PG&E's aforementioned data responses, and by Bechtel reports. As
14 long ago as 1984 Bechtel stated that "*though the [PG&E] area engineers expressed little*
15 *confidence...in the accuracy of this data variable, they were under the belief that the leak history*
16 *was under-recorded not over*" (1984 report, p. 8).

17

¹⁰⁴ PG&E Response Testimony Page 3-60-23

5. Common Themes and Perceived Issues

5.1. Overview

There are a number of common themes and records management defenses raised by PG&E in its response testimony served on June 27. The purpose of this section is to address each of these defenses in turn. We also demonstrate how PG&E's own findings actually support CPSD's asserted violations and discussions of deficient recordkeeping in its March 2012 testimony. New evidence provided by PG&E to CPSD since March 2012 is presented to support CPSD's original findings, namely that PG&E's recordkeeping practices have been deficient and have diminished pipeline safety.

PG&E claims that CPSD has applied subjective and comparatively new measures that are incompatible with a backward-looking penalty investigation.¹⁰⁵ We disagree. The Generally Accepted Recordkeeping Principles (GARP) used by CPSD are firmly rooted in long-standing and understood information management best practices and US Federal law and case law. Legal precedent abounds, in particular, for the principles of accountability integrity, and compliance.¹⁰⁶ GARP was selected for use in CPSD testimony as a framework and reporting tool to illustrate our findings in a clear and consistent manner that could be understood by the Commissioners, the Administrative Law Judge, all parties to this proceeding, laypersons, and any records manager in the U.S. GARP was one of many frameworks that could have been used to evaluate PG&E's records management. However, the choice of any appropriate framework would not have influenced the facts discovered, our findings, or assessment result about PG&E's records management. The relevance of GARP as a framework will be discussed more under the next subheading.

PG&E states that "*federal regulations have dealt pragmatically with the challenge that gas operators may lack complete gas pipeline safety records*".¹⁰⁷ However, from a records management point of view this is not a valid PG&E excuse for failure to address the long-standing recordkeeping issues necessary to promote the safety of its gas transmission system. Indeed, such recordkeeping issues were identified by PG&E as early as 1984.¹⁰⁸ This section will address this from a variety of perspectives. CPSD will show that PG&E's Job Files, the primary source of safety-critical pipeline information, were not controlled, tracked or

¹⁰⁵ PG&E Response Testimony 1-2-7;

¹⁰⁶ Montana, John (2009) GARP Mapping a route for compliance, page 10-12. In: Hot Topic, Taking a closer look at ARMA International's Generally Accepted Recordkeeping PrinciplesSM.

¹⁰⁷ PG&E Response Testimony Page 1B-15-31

¹⁰⁸ Bechtel Inc. - Engineering Consulting Services for Pacific Gas and Electric Company – Pipeline Replacement Program Transmission Line Risk Analysis Revision 0 – January 1984

1 consistently managed; tat PG&E’s document, records management and GIS systems have
2 multiple data quality issues and that unreliable, missing, incomplete, inaccurate data and
3 referential integrity problems have not been identified or addressed in a timely manner
4

5 A significant proportion of PG&E's testimony is devoted to the actions of its General
6 Office Department, which was responsible for corporate records, rather than the Gas
7 Transmission Division. However, our specific area of concern has been the activities of the Gas
8 Transmission Division, because that department has been most directly concerned with the gas
9 safety recordkeeping that is under review in this investigation.¹⁰⁹
10

11 PG&E’s testimony lists and discusses the corrective actions it has taken since the San
12 Bruno accident to improve its asset knowledge and records management practices.¹¹⁰ We
13 recognize that after the San Bruno pipeline rupture and fire PG&E has begun to construct a
14 records management organization that it believes will develop and sustain a records management
15 focus at the corporate enterprise level and within the gas transmission organization. However,
16 post San Bruno actions are not within the Commission’s assigned scope of the current
17 investigation, save for the facts that they provide evidence of the lack of document and records
18 management controls that existed prior to San Bruno, and of the size and scale of the effort
19 required to reintroduce such controls and improve data quality. For example, PG&E has
20 provided extensive details of the “*huge and on-going MAOP Validation and Records*
21 *Verification project*”,¹¹¹ as well as PG&E’s Gas Transmission Asset Management Project
22 (GTAM) which, when completed, will integrate numerous existing data management tools into
23 three coordinated document management systems (SAP, GIS, and Documentum).¹¹²
24

25 The matter of post San Bruno activity is addressed succinctly in the Rebuttal Testimony
26 presented by Julie Halligan.¹¹³ CPSD believes that the size and scale of the corrective actions
27 required, the number of disparate systems in place, and the lack of coordinated document
28 management across three of PG&E’s most important IT systems provide clear evidence of the
29 deficient state of records management within PG&E prior to San Bruno.
30

31 CPSD also wish to emphasize that, when recordkeeping so clearly affects safety, a gas
32 operator should develop practices that both promote good safety recordkeeping practices, and
33 should take into account known safety deficiencies in its recordkeeping practices and seek other

¹⁰⁹ PG&E Response Testimony Page 2-14-21

¹¹⁰ PG&E Response Testimony Page 1-3-20

¹¹¹ PG&E Response Testimony Page 1-3-22

¹¹² PG&E Response Testimony Page 1-3-23

¹¹³ I.11-02-016 Rebuttal Testimony of Julie Halligan, CPSD.

1 means to keep its system safe. PG&E has known for a long time that its recordkeeping was
2 deficient to achieve safety. Instead of addressing the problem (pipe replacement, dig up pipes
3 and test, hydrotest etc.) PG&E appears to have artificially reduced the integrity management risk
4 associated with safety areas for which PG&E had poor recordkeeping (e.g. leaks, age of re-used
5 pipe).

6
7 **5.2. GARP concepts are not new to the gas transmission industry and GARP was the**
8 **most relevant framework within which to present our findings**

9 PG&E asserts that the CPSD analysis attempts to hold PG&E to an aspirational standard
10 of records management excellence that is only just now gaining recognition in the gas industry.
11 PG&E goes on to state that “*the report lacks context - an effort to evaluate PG&E alongside its*
12 *peers across different eras of information management technical and regulatory change*”.¹¹⁴
13 PG&E elaborates on this point in many areas of its testimony, as shown by these indented
14 quotes.

15 *Many of the CPSD allegations are based on application of new, subjective, and*
16 *untested assessment methodologies to more than 50 years of past records*
17 *management practices. The result is a series of hindsight judgments, lacking*
18 *real world perspective and historical context*”.¹¹⁵

19
20 *The CPSD testimony applies subjective and comparatively new measures -*
21 *eight Generally Accepted Record-keeping Principles (GARP) and the*
22 *Information Governance Maturity Model’s five levels of maturity - to assess*
23 *historic records management practices.*¹¹⁶

24
25 *The CPSD assessment and evaluation of PG&E’s records management*
26 *activities is based solely upon GARP principles and the Information Model*
27 *defined by ARMA International.*¹¹⁷

28
29 *The GARP and Information Maturity Model benchmarking methodologies are*
30 *incompatible with a backward-looking penalty investigation.*¹¹⁸

31

¹¹⁴ PG&E Response Testimony Page 1-2-7

¹¹⁵ PG&E Response Testimony Page 0-1-17

¹¹⁶ PG&E Response Testimony Page 1-1-28

¹¹⁷ PG&E Response Testimony Page 1-1-31

¹¹⁸ PG&E Response Testimony Page 1-3-7

1 *Many of the historic practices now judged as deficient using the GARP*
2 *assessment standards, predate the assessment standards themselves, predate*
3 *gas pipeline safety regulation, predate modern records management*
4 *technologies, and predate the National Transportation Safety Board*
5 *(NTSB's)"traceable, verifiable and complete" recommendations.*¹¹⁹
6

7 In spite of PG&E's conjecture about the GARP principles, Maura Dunn, PG&E's
8 Records Management expert witness, alludes to the true stature of these time-tested principles in
9 the gas transmission industry, when she states, "*the GARP principles themselves are fairly*
10 *innocuous and do not represent anything new or earth shattering in the industry*"¹²⁰ and "*It is*
11 *hard to object to the statements that these principles make about how records should be created,*
12 *maintained or destroyed*".¹²¹ In spite of this, PG&E still questions CPSD's use of GARP in this
13 proceeding to provide guidance about how PG&E's records should have been "*created,*
14 *maintained, and destroyed*" by using sound and accepted recordkeeping principles.
15

16 In fact, records management is not a new concept, nor are its industry groups such as
17 ARMA. CPSD used ARMA International's Generally Accepted Recordkeeping Principles
18 (GARP[®]) as a basis for presenting a number of its findings in its original March 2012 testimony.
19 GARP[®] was used in our report as a framework and reporting tool to illustrate many of our
20 findings in a clear and consistent manner that could be understood by the Commissioners, the
21 Administrative Law Judge, all parties in this proceeding and any records manager in the U.S.
22

23 Many other frameworks could have been used to present our findings, including but not
24 limited to ISO9001, ISO15489-1, ANSI/ARMA 9-2004, ANSI/ARMA 5-2003, ISO/IEC 27002,
25 ANSI/ARMA 8-2005.¹²² However, GARP[®] was selected for this investigation as it was based
26 upon these long-standing and accepted key standards and best practices. GARP offered the most
27 complete and clearly documented framework in the US for such a review. However, none of
28 these other frameworks would have changed our main findings.
29

30 While the March 2012 CPSD records testimony was based upon considerably more than
31 GARP alone, GARP principles are firmly rooted in information management best practices and

¹¹⁹ PG&E Response Testimony Page 1-1-2

¹²⁰ PG&E Response Testimony Page MD-9-10

¹²¹ PG&E Response Testimony Page MD-9-11

¹²² As confirmed by ARMA International August 3, 2012. Other standards that reinforce GARP principles are referenced on the ARMA web site (www.arma.org/garp).

1 long-standing US Federal law and case law. Legal precedent abounds, in particular, for the
2 principles of accountability integrity, and compliance.¹²³

3
4 In 2009 Gartner¹²⁴ vice president Debra Logan, stated that ARMA International's
5 Generally Accepted Recordkeeping Principles[®] are an effort to bring standardization to the world
6 of records management, in much the same way as the generally accepted accounting principles
7 (GAAP) have brought standardization to financial accounting in the United States.¹²⁵ In addition,
8 at the ARMA International 56th Annual Conference and Expo in October 2011, Debra Logan
9 reported that GARP[®] is practiced in about 15% of companies in the USA. Diane Carlisle, deputy
10 executive director and senior director of content development at ARMA International stated that
11 this percentage is small compared with GARP's cousin, GAAP, the Generally Accepted
12 Accounting Principles, upon which GARP[®] is based, but GARP[®] use is growing.

13
14 Given that the GARP principles are firmly rooted in established and recognized
15 information management and accounting best practices, long-standing US. Federal law and case
16 law, that GARP is based in extensive legal precedent and that GARP is practiced in 15% of
17 companies in the USA, CPSD stands by its selection of GARP in this investigation.

19 **5.3. Our GARP scores were based upon CPSD's view of PG&E as of September 2010**

20 PG&E's witness, Ms. Dunn, noted "*It is hard to tell whether that (GARP®-based*
21 *assessment) grade represents the state of the program in 1959, in 2010, or on average over the*
22 *entire 50-year period.*"¹²⁶ To clarify, we produced a GARP assessment of PG&E's records
23 management as of the time of the San Bruno incident. We did not attempt to produce a decade
24 by decade GARP assessment of PG&E's position at the time of the San Bruno incident in Sept
25 2010. However, it is important to recognize that the state of PG&E's records in September 2010
26 was a culmination of PG&E's recordkeeping activities over the prior six decades. It should also
27 be recognized that the current state of PG&E's records have made it impossible for a completely
28 accurate snapshot of PG&E's state of recordkeeping at any particular time or period, especially
29 decades ago, or right up to September 2010, particularly given PG&E's post San Bruno
30 relocation of its records from Walnut Creek, Bayshore and regional offices to either Emeryville
31 or Iron Mountain.

¹²³ Montana, John (2009) GARP Mapping a route for compliance, page 10-12. In: Hot Topic, Taking a closer look at ARMA International's Generally Accepted Recordkeeping PrinciplesSM, 16 pages.

¹²⁴ Gartner is the world's leading information technology research and advisory company (www.gartner.com).

¹²⁵ Logan, D (2009) Principles for gaining control of electronic information, Information Management Journal. ISSN: 1535-2897. Page 1 of 6.

¹²⁶ PG&E Response Testimony Page MD-7-15

1 **5.4. PG&E’s Approach to Records Retention was confusing, sometimes conflicting,**
2 **poorly communicated and poorly enforced**

3 This section addresses several key issues raised by PGE’s testimony regarding records
4 retention. First, it explains the discrepancies between Maura Dunn’s GARP® score of PG&E’s
5 retention policies and that pointed out in the CPSD report. Second it discusses PG&E claim that
6 it corresponded with CPUC for help. Third, it points out PG&E’s deficiencies when auditing
7 records retention. Fourth it points out that ASME Standard B31.8 does carry the weight of law.
8

9 Ms. Dunn references PG&E’s 1964, 1994, and 2010 Records Retention Schedules
10 (“Retention Schedules”),¹²⁷ which set forth certain of PG&E’s minimum retention periods for
11 retaining certain kinds of documents. These three records retention schedules set forth minimum
12 periods that PG&E had to keep different types of records. They were referenced in Appendix 9
13 of the CPSD report¹²⁸ and compared with the ASME standards; 49 CFR Section 192; and some
14 or all of Commission General Orders 112, 112A or 112B. These comparisons were the basis of
15 the Records Retention Violations B.1 through B.6, articulated in the CPSD Supplemental
16 testimony submitted on March 30, 2012, pages 3 and 4.¹²⁹
17

18 Regarding the Retention Schedules, Ms. Dunn states¹³⁰ that “*in my opinion, (PG&E’s)*
19 *1994 and 2010 documents meet the requirements of level 3—Essential*”. We understand Ms.
20 Dunn to be referring to the GARP® Principle on Retention.¹³¹ Ms. Dunn goes on to state that,
21 “*It is not fair to subject the 1964 document to the requirements of GARP®, which were not*
22 *issued until 2009.*”¹³² However, she would give the 1964 schedule a GARP® level 1—Sub-
23 standard.¹³³
24

25 Ms. Dunn’s discussion raises several key differences between her evaluation of PG&E’s
26 records retention and that of CPSD.

¹²⁷ Dunn Testimony, MD-11 to MD-14. The 1964 schedule is PG&E document P2-195. The 1994 schedule is PG&E document P2-212. The 2010 schedule is P2-230.

¹²⁸ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, Pages 9-158 to 9-169.

¹²⁹ In Appendix 9, CPSD also compared PG&E’s retention schedules from 2005 (PG&E document P2-225) and from 2008 PG&E document P2-227).

¹³⁰ PG&E Response Testimony Page MD-15-7 to MD-15-8

¹³¹ <http://www.arma.org/garp/metrics-retention.cfm>

¹³² PG&E Response Testimony Page MD-15-4 to MD-15-5

¹³³ PG&E Response Testimony Page MD-15-6 to MD-15-7

1 First, Ms. Dunn appears to highlight the best GARP® score that PG&E received from the
2 CPSD report, that of retention, while ignoring all of the other scores raised in the CPSD report.

3
4 Second, the CPSD report gave PG&E an *overall* score of 2.5 for retention because that
5 score took into account both PG&E's retention policies and PG&E's *poor implementation* of
6 those policies.¹³⁴

7
8 Third, even when focusing only on the retention policy portion of the overall retention
9 score of 2.5, the CPSD report focused upon the *comprehensive history* of PG&E's extensive set
10 of retention policies. Indeed, the CPSD report recognizes the same PG&E retention policies that
11 PG&E reiterates in Chapter 2 of its Response testimony.¹³⁵

12
13 In stark contrast, however, Ms. Dunn has attempted to reduce the CPSD retention
14 analysis to give a GARP® score based on only three retention schedules, and said it is unfair to
15 include one of those because it is too old.¹³⁶ Apparently, Ms. Dunn misses the CPSD
16 comprehensive account of retention schedules because she suggests that "*Dr. Duller and Ms.*
17 *North depend on (the three schedules) to represent the entire program. . .*"¹³⁷ The deficient and
18 limited scope of Ms. Dunn's approach is exacerbated by her admission that PG&E does not have
19 a copy of its 1959 records retention schedule that would accompany Standard Practice 210.4-
20 4.¹³⁸ Indeed, Ms. Dunn emphasizes that PG&E may have inadvertently lost records during office
21 moves and re-organizations.¹³⁹ Could PG&E be missing other retention schedules and not know
22 it?

23 CPSD must beg to differ with the extremely limited scope of Ms. Dunn's scoring.
24 CPSD's approach to look at a comprehensive history of PG&E's corporate retention policies,
25 rather than only three, illustrates the overall rationale of GARP® that we articulated earlier.
26 Namely, we produced a GARP assessment of PG&E's records management as of the time of the
27 San Bruno incident. However, the state of PG&E's records in September 2010 was based upon

¹³⁴ Duller/North Opening Report, Page 6-38, lines 1-3 and Table 6-5.

¹³⁵ Compare CPSD March 2012 Testimony Appendix 7, Section 8.7.2 from Pages 8-145 to 8-150 with PG&E Response Testimony Pages 2-4-5 to 2-7-13. These retentions cited include the CSPs /USP and GOV7001S. The only additional retention requirement that PG&E cites is the reference to the 1924 Commonwealth of Massachusetts on page 2-5 (footnote 7). However, PG&E has not shown why record retention regulations from Massachusetts have jurisdiction over the California operations of PG&E or are relevant to them in any way.

¹³⁶ PG&E Response Testimony Page MD-15-4 to MD-15-9

¹³⁷ PG&E Response Testimony Page MD-12-2 to MD-12-5

¹³⁸ PG&E Response Testimony Page MD-44-9 to MD-44-10

¹³⁹ PG&E Response Testimony Page MD-58 (footnote 108)

1 PG&E’s record keeping activities over the prior six decades¹⁴⁰, and so our assessment was based
2 upon those prior activities as well.¹⁴¹

3
4 **PG&E claims that it corresponded with CPUC and asked for help**

5 Specifically, PG&E cites to Commission Resolution FA-570 and suggests that it marked
6 the first time the Commission addressed comprehensively the retention of records of the kind
7 required to be maintained by General Orders. PG&E quotes Resolution FA-570 to state, “*No*
8 *FA-554 should be modified and that preservation of records by gas and electric utilities under*
9 *the jurisdiction of this Commission should be governed by the regulations of the Federal Power*
10 *Commission except as modified herein.”¹⁴² This issue will be addressed in the rebuttal testimony
11 of Margaret Felts Section 17.*

12
13 **PG&E’s testimony inaccurately suggests it had certain audit and oversight features**

14 PG&E suggests that the CPSD report inaccurately suggests that PG&E’s past retention
15 program lacked audit and oversight features.¹⁴³ However, PG&E states that “*PG&E agrees that*
16 *it needs to incorporate better and stronger audit and oversight features into its records retention*
17 *program”.*¹⁴⁴ Moreover, in support of its suggestion that the CPSD testimony is incorrect,
18 PG&E provides examples that are not of actual audits or even a template containing audit
19 questions. Rather they are examples of instructions about audit. They failed to show what the
20 audits covered and that the audits were actually undertaken. They also failed to show the
21 difference between auditing that the records retention process was carried out; documenting and
22 acting on the results of the audit; and, auditing that the versions of the records retained were the
23 correct ones. This shows PG&E management’s lack of commitment or strategy to deliver
24 compliant, complete and trustworthy records and information to support PG&E’s engineering
25 practices in the gas division.

26
27 **PG&E failed to act upon the 2008 audit it claims it performed**

28 PG&E claims it performed a 2008 internal audit of electronic data management
29 practices.¹⁴⁵ According to PG&E, this audit found several issues regarding retention,¹⁴⁶ and even

¹⁴⁰ CPSD’s investigation was limited by PG&E’s relocation of its records post September 2010

¹⁴¹ See Section 5.3 of this report for a full discussion.

¹⁴² PG&E Response Testimony Page 2-9-21 to 2-10-4

¹⁴³ PG&E Response Testimony Page 2-11-16

¹⁴⁴ PG&E Response Testimony Page 2-11

¹⁴⁵ PG&E Response Testimony Page 2-13-10

¹⁴⁶ PG&E Response Testimony Page 2-13-17 to 2-13-22

1 proposed a solution.¹⁴⁷ However, PG&E again fails to show in its testimony that it acted upon
2 these audit results. Moreover, in PG&E's USP4 retention schedule 'audit reports' are to be
3 retained for 5 years.¹⁴⁸ However, CPSD requested PG&E's audit reports, including the one from
4 2008 that PG&E mentions in its response testimony, but PG&E provided none.¹⁴⁹

6 **Contrary to PG&E claim the ASME standard does carry the weight of law**

7 Ms. Dunn suggest that the ASME standard does not carry the weight of law - This will
8 be addressed by CPSD in the rebuttal testimony of Julie Halligan.

10 **5.5. Job File index fields were inconsistent and exhibited data quality errors**

11 PG&E claims that CPSD alleges that "*the Emeryville and ECTS data catalogues have*
12 *'inadequate front-end validation, verification and insufficient data quality consistency checks'*".
13 PG&E disagrees, asserting that its document-typers were trained and tested.¹⁵⁰ In this instance,
14 CPSD was not questioning PG&E's document type classification efforts. Instead, CPSD
15 focused upon the consistency of the indexing process, particularly with regard to important
16 primary index fields/metadata such as job number, and the significant potential for poor
17 referential integrity across the three enterprise systems (SAP, Documentum and PG&E's
18 enhanced GIS (Intrepid) that PG&E propose to use to eliminate the large number of disparate
19 and largely uncoordinated data systems (IGIS, GIS 2.0, EDMS, ECTS, PSRS, Gas FM, PLM)
20 that currently exist within the company.¹⁵¹

22 **5.6. Job file numbers were recorded inconsistently**

23 PG&E states that CPSD "*confused historical job numbering conventions with the recent*
24 *activities involved in the processing of job file documents as part of the MAOP validation*"¹⁵² and
25 that "*these are transitory post-September 2010 developments intended to support the MAOP*
26 *validation efforts, and do not represent data quality problems*".¹⁵³

¹⁴⁷ PG&E Response Testimony Page 2-13-31 to 2-13-32

¹⁴⁸ Chapter 2 and 2a attachments PG&E June 2011 filing, P2-3 records retention and disposal guidance for transmission and distribution systems.

¹⁴⁹ GasTransmissionSystemRecordsOII_DR_CPUC_070-Q13 CPUC Data Request 70, Question 13

¹⁵⁰ PG&E Response Testimony Page 1-25-17

¹⁵¹ PG&E Response Testimony Page 1-28-3

¹⁵² PG&E Response Testimony Page 3-37-23

¹⁵³ PG&E Response Testimony Page 3-37-25

1 CPSD disagrees with PG&E's assertion, and can demonstrate, using data sets recently
2 provided by PG&E, that PG&E's job numbering conventions are still inconsistent.¹⁵⁴ Using
3 these datasets CPSD finds that many of the data quality errors and inconsistencies identified by
4 CPSD in the March 2012 testimony still exist, and are being perpetuated in PG&E's new core
5 systems, such as their new GIS (Intrepid). If not addressed, such errors will directly impact
6 referential integrity between systems, as well as the future accessibility of source documents and
7 records relating to PG&E's pipeline system.

8
9 With respect to the ECTS database and the data quality indexing issues identified by
10 CPSD, PG&E has acknowledged many inconsistencies in the ways job numbers appear in its
11 ECTS system, but refers to them simply as variations.¹⁵⁵ For example, if there was no job
12 numbers marked on a job file, the upload team may have used one of the following categories of
13 information, to create a mock "job number" for reference purposes: Gas service numbers;
14 Addresses; Job scheduling numbers; Plat sheet numbers; Line numbers; SAP part numbers;
15 and/or Valve maintenance numbers. PG&E then detail five possible types of variation in their
16 coding, with the inconsistent addition of prefix's, suffixes, accounting codes and/or dates added.
17 While PG&E indicates that the way job numbers appear in ECTS does not reflect PG&E's
18 historic job numbering system, our analysis of the Job Numbers in the current and new GIS
19 systems reveal many of the same coding inconsistencies and data quality problems that PG&E
20 identified with its ECTS system.

21 22 **5.7. PG&E's distributed Job files were 'multiples' not 'duplicates'**

23 PG&E uses the term 'duplicate' in its testimony to refer to job folders located in more
24 than one office,¹⁵⁶ in order to mischaracterize the nature of the job files and give the impression
25 that the contents of each job folder for any given job was identical from office to office. In her
26 testimony, Ms. Dunn was far more precise in her description of such folders and used the term
27 'multiple' rather than 'duplicate' to repeatedly describe them.¹⁵⁷ This is not simply a pedantic
28 issue, but has fundamental Records Management implications. Use of the term duplicate implies
29 that the duplicated job folders were identical copies of a master folder (the 'record'). From a
30 records retention perspective, 'duplicate' copies can be disposed of as long as the master record
31 exists. In fact, it was the case within PG&E that the content of the job folders was not identical,

¹⁵⁴ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q09Atch1 CPUC Data Request 66, Question 9

¹⁵⁵ GasTransmissionSystemRecordsOII_DR_CPUC_070-Q06 CPUC Data Request 70, Question 6

¹⁵⁶ PG&E Response Testimony Page 3-38-1 to 3-38-20

¹⁵⁷ PG&E Response Testimony Page MD-19-4; MD-19-8; MD-19-11; MD-19-14; MD-23-4; MD-23-11; MD-23-15; MD-23-19; and MD-23-31.

1 nor were the number of job folders used in each office for any given job. As such, the term
2 ‘multiple’, quite rightly used in this instance by Ms Dunn, is more appropriate.¹⁵⁸
3

4 **5.8. Less than 6% of PG&E’s Job files contain weld records**

5 PG&E’s testimony states that “*contrary to Ms Felts conclusion that ‘few weld records*
6 *can be found in PG&E job files’, the volume of documents reviewed (and identified as a unique*
7 *document type in PG&E’s ECTS database) demonstrate that our practice has been to retain*
8 *these types of records*”.¹⁵⁹ When questioned regarding this statement, PG&E reported that it had
9 identified weld records in 5000 job files.¹⁶⁰ While this figure appears large, it only represents a
10 small fraction (5.7%) of the 87,018 transmission jobs files held in Emeryville, as detailed in
11 CPSD’s March 2012 testimony¹⁶¹. As PG&E’s own figures indicate that 94.3% of its job files
12 do not contain weld records, CPSD believes that this refutes PG&E’s testimony in this matter.
13 Virtually all transmission pipe segments have some welds in them.
14

15 **5.9. PG&E did not track or control all of its Job Files in the Gas Transmission Division**

16 PG&E states that in 1983 it “*developed a computer system that allow(s) for tracking of*
17 *records when they entered, left or were transferred among PG&E storage facilities*” and “*that*
18 *system was transferred to a PC desktop system in 1985*”.¹⁶² This statement is misleading, in that
19 the computer system PG&E refers to only recorded and tracked those records held in, or
20 transferred to PG&E’s central storage facilities (e.g. Bayshore, 33rd floor PG&E headquarters,
21 Potrero Power Plant). This tracking system was not used to record the location of, or track the
22 transfer dates of the gas transmission records stored in the regional and district offices.
23

24 **5.10. PG&E’s job files are important as they are a primary source of pipeline information**

25 Ms. Dunn was apparently surprised by the focus of CPSD’s “*bothersome*” attention and
26 the significance placed upon PG&E’s Job files.¹⁶³ However, CPSD maintain that due to PG&E’s
27 inadvertent destruction of the pipeline history files, the Job files in question are hugely important
28 as they form the most important, source of original (or ‘primary’) records relating to the

¹⁵⁸ PG&E Response Testimony Page 3-38-2

¹⁵⁹ PG&E Response Testimony Page 3-56-15

¹⁶⁰ GasTransmissionSystemRecordsOII_DR_CPUC_070_Q09 Data Request 70 – Question 09

¹⁶¹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

¹⁶² PG&E Response Testimony Page 2-19-1

¹⁶³ PG&E Response Testimony Page MD-17-7

1 engineering job and the single most important source of the information and metadata used to
2 populate the pipeline databases, risk assessments and pipeline survey sheets (the basis for
3 PG&E's GIS system). As explained in CPSD's March 2012 testimony¹⁶⁴, there was no
4 definitive "master" set of Transmission Job files available within PG&E. In substance, PG&E
5 agrees that job files are the means by which PG&E maintains its critical and original (or
6 'primary') safety pipeline records and related information. The fact that PG&E had to expend 30
7 man years of effort during the Cow Palace exercise, simply to find pipeline records to validate
8 MAOP in HCA, is both a testament to the importance of the Job files and the poor state of record
9 keeping of these files prior to the San Bruno pipeline rupture and fire. PG&E is continuing to
10 identify and review its Job files, and only recently, as part of the MAOP Data Validation Project
11 (July 10, 2012) identified a further 15,045 Job files in 107,700 boxes transferred to Iron
12 Mountain following the Cow Palace review. PG&E states that these previously missing job files
13 "may be valuable for constructing PFLs (Pipeline Feature Lists) for the remaining GIS
14 routes".... "PG&E believes that there is also potential for valuable records pertaining to some
15 or all of these 15,045 job numbers at Iron Mountain".¹⁶⁵ These Job files were not identified on
16 PG&E inventory, table of statistics or datasets provided to CPSD until August 18th two days
17 prior to the deadline of this testimony. As such CPSD reserves the right to provide supplemental
18 testimony regarding these data once it has completed its analysis of them.

19

20 As PG&E is not aware of the amount of duplication or overlap of records in these new
21 folders with that already held at Emeryville "PG&E has begun to compare this list of 15,045 job
22 numbers to the Bayshore Records Center's FoxPro database, in order to research the content of
23 boxes stored at Iron Mountain. As of August 17, 2012, PG&E has researched just over 15%, or
24 2,356, of the 15,045 job numbers. As these boxes are extracted from Iron Mountain, PG&E plans
25 to withdraw the relevant job files in an effort to make available any records not previously
26 discovered through alternate retrieval methods".¹⁶⁶

27

28 The absence of such a large collection of Job Files (15,045) from the Job Files (87,018)
29 held at Emeryville is a concern to CPSD. The quality of the metadata used to populate PG&E's
30 databases, PFL's and GIS systems is entirely dependent upon the information originally gleaned
31 from the Job file, as is the quality of any risk assessment undertaken or decisions made based
32 upon the data compiled from them. This latest 'find' by PG&E provides further evidence to
33 illustrate CPSD's contention that no one in PG&E was aware of where all of PG&E's job files

¹⁶⁴ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

¹⁶⁵ GasTransmissionSystemRecordsOII_DR_CPUC_084-Q01 CPUC Data Request 84, Question 1

¹⁶⁶ GasTransmissionSystemRecordsOII_DR_CPUC_084-Q01 CPUC Data Request 84, Question 1

1 were stored or how to access them. As such, it would be virtually impossible for PG&E to
2 guarantee that they had used the most up to date, definitive, consistent, complete and accurate
3 source of project information for every database or GIS entry. CPSD wish to point out that this
4 has important implications for data quality, completeness and consistency within PG&E.
5 PG&E's current GIS 2.0 was populated with data from a secondary/tertiary source, namely the
6 Pipeline Survey Sheets, which themselves were derived from Pipeline Density Survey Sheets
7 (the precursor to the Pipeline Survey Sheets), which in turn were compiled from Job file
8 information.¹⁶⁷ These sheets were not necessarily the most complete, up to date or accurate
9 source of pipeline job information, as PG&E have found to their cost. PG&E state that their
10 "*enhanced GIS (Intrepid) is being built from the ground up by leveraging PFL (pipeline feature*
11 *list) data rather than the data that is used to populate the existing GIS*".¹⁶⁸ This point highlights
12 that data quality issues within PG&E's existing GIS render the existing data unusable within the
13 new GIS system.

14
15 In summary, PG&E did not have a control system in place to monitor the location of all
16 of their job folders, or the location of job folders for any given job. CPSD maintain that PG&E
17 had simply lost control of the job files stored in the regional offices and no 'master' index
18 existed to cogently steer safety engineers to the proper files to review. While PG&E use terms to
19 imply that there was a 'master job folder' for each job, Ms Dunn goes so far to state that PG&E
20 field staff "*may have added notes or other information to their own copies of the files, to*
21 *facilitate their work, and would have sent copies of any redlines or other updates back to be*
22 *incorporated into the master job file*" and that "*standard operating procedures dictated that*
23 *updates be transmitted and incorporated in a timely manner to the master job file*".¹⁶⁹ CPSD
24 know from our statistical assessment of the distribution and size of job files in the regional
25 offices, as presented in our original testimony, that this cannot be the case and refute this.¹⁷⁰ In
26 addition, statements made by PwC in their interim and final reports also support CPSD's
27 assertions in this matter.^{171,172, 173}

¹⁶⁷ GasTransmissionSystemRecordsOII_DR_CPUC_045-Q05 CPUC Data Request 45, Question 5

¹⁶⁸ PG&E Response Testimony Page 1-22-25

¹⁶⁹ PG&E Response Testimony Page MD-23-7 to MD-23-14

¹⁷⁰ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

¹⁷¹ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp04Atch01. Gas Operations Records and Information Management Assessment. Internal Report produced by PwC. March 31st 2012.

¹⁷² GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i) Supplement-Summary of Information Management Key Themes: PG&E Gas Mapping Organization , Internal PG&E report produced by PwC. January 18, 2012.

¹⁷³ GasTransmissionSystemRecordsOII_DR_CPUC_060-Q14Atch01. PG&E Gas RIM Consolidated Detailed Interview Notes (Excluding Gas Distribution Mappers). Internal PG&E report produced by PwC. January 20, 2012.

1 **5.11. Contrary to PG&E's Assertions, PG&E is missing thousands of Job Files**

2 CPSD's March 2012 testimony identifies sequence gaps in job numbering and infer that
3 these gaps show missing gas transmission job files.¹⁷⁴ PG&E asserts that CPSD's inference
4 lacks support, claiming that the job numbers are issued across various enterprises, so that a gap
5 between one transmission job number and another *may* reflect intervening gas distribution,
6 electric, hydro and other projects—not necessarily gas jobs.¹⁷⁵ As this point has fundamental
7 implications regarding the state of PG&E's record keeping prior to San Bruno, CPSD provides
8 the necessary evidence to support our assertions in the following section:

9
10 In July 2012 PG&E provided a list of 4669 Job Numbers from their new GIS system,
11 called Intrepid. This list was originally compiled from a range of primary PG&E sources such as
12 construction as-built drawings and secondary sources such as Plat Sheets.¹⁷⁶ CPSD compared
13 the partial list of PG&E Job numbers from PG&E's new GIS (4,669 Job Numbers) with the
14 Emeryville catalogue of existing gas transmission Job Folders (87,018 unique job numbers). The
15 findings show that some of the job numbers in PG&E's new GIS Intrepid system do not have a
16 matching job number, and at least one physical job folder in the Emeryville catalogue. This
17 confirms that these jobs numbers once existed because PG&E references them from primary
18 sources. Therefore, any corresponding job folder(s) may now be classified as "*Missing*". This
19 conclusion is supported by the following points:

- 20
- 21 • 1619 (35%) of the 4669 Job Numbers recorded in PG&E's new GIS (Intrepid) do NOT
22 have a matching job number, and at least one physical job folders in the Emeryville
23 Catalogue.
 - 24
 - 25 • 3050 (65%) of the 4669 job numbers in PG&E's new GIS (Intrepid) have corresponding
26 entries within the 87018 unique job numbers identified in the Emeryville Catalogue (e.g.
27 a (3.5% match).
 - 28
 - 29 • If this observed trend continues, (e.g. 35% of job numbers in the Intrepid GIS system are
30 missing from the Emeryville Catalogue), this would equate to approximately 30,000
31 missing job numbers (and corresponding physical job files) in total.
 - 32

¹⁷⁴ The CPSD opening report identified that sequence gaps in the first 10,000 Job Number record series of PG&E's Emeryville Catalogue illustrated a large number (6748 or 67.5%) of missing job folders.

¹⁷⁵ PG&E Response Testimony Page 3-37-13

¹⁷⁶ GasTransmissionSystemRecordsOII_DR_CPUC_066_Q04 Data Request 66, Question 4. As identified in this data request, this list was incomplete and represented only a small fraction of the known jobs. PG&E explained the small number by stating that this data was still in the process of being compiled

- 1 • 173 out of the first 365 job numbers (47%) in the first 1-10,000 job number series
2 identified in the new PG&E GIS do NOT have a corresponding Job file entry in the
3 Emeryville catalogue. The fact that these Job Numbers were identified by PG&E on
4 primary source documents and plat sheets provide the supporting evidence necessary to
5 demonstrate that these job numbers actually existed, were in use within PG&E, and
6 should have had a corresponding job file associated with them.
7
- 8 • These findings provide the evidence necessary to support the CPSD's contention that
9 approximately 67.5%+ of the first 10,000 job numbers were actually assigned within the
10 Gas Division and that a significant proportion of the corresponding job files and folders
11 6748 are now missing.
12
- 13 • Some of the "missing" Job Numbers will never be identified as they are recorded as
14 'unknown' or 'to-be-defined' in the PG&E GIS (Intrepid) job Number list (e.g. job
15 numbers include 'TBD', 'unk', 'UNK' and 'unknown').
16
- 17 • Approximately 5% of the unmatched records between PG&E's new GIS Intrepid and its
18 existing Emeryville catalogue did not match due to inconsistent coding and data
19 transcription errors in the data provided (e.g. the addition of a combination of spaces,
20 dashes, alphabetic prefixes/suffixes).
21
- 22 • PG&E is continuing to identify 'Missing' Job files, and only recently, as part of the
23 MAOP Data Validation Project (July 10, 2012) identified a further 15,045 Job files in the
24 collection of 107,700 boxes transferred to Iron Mountain following the Cow Palace
25 review.¹⁷⁷ Details of the 'missing' Job file numbers was presented to CPUC on the 18th
26 August, 2 days before the due date for this rebuttal testimony.
27
28
29

¹⁷⁷ GasTransmissionSystemRecordsOII_DR_CPUC_084-Q01 CPUC Data Request 84, Question 1

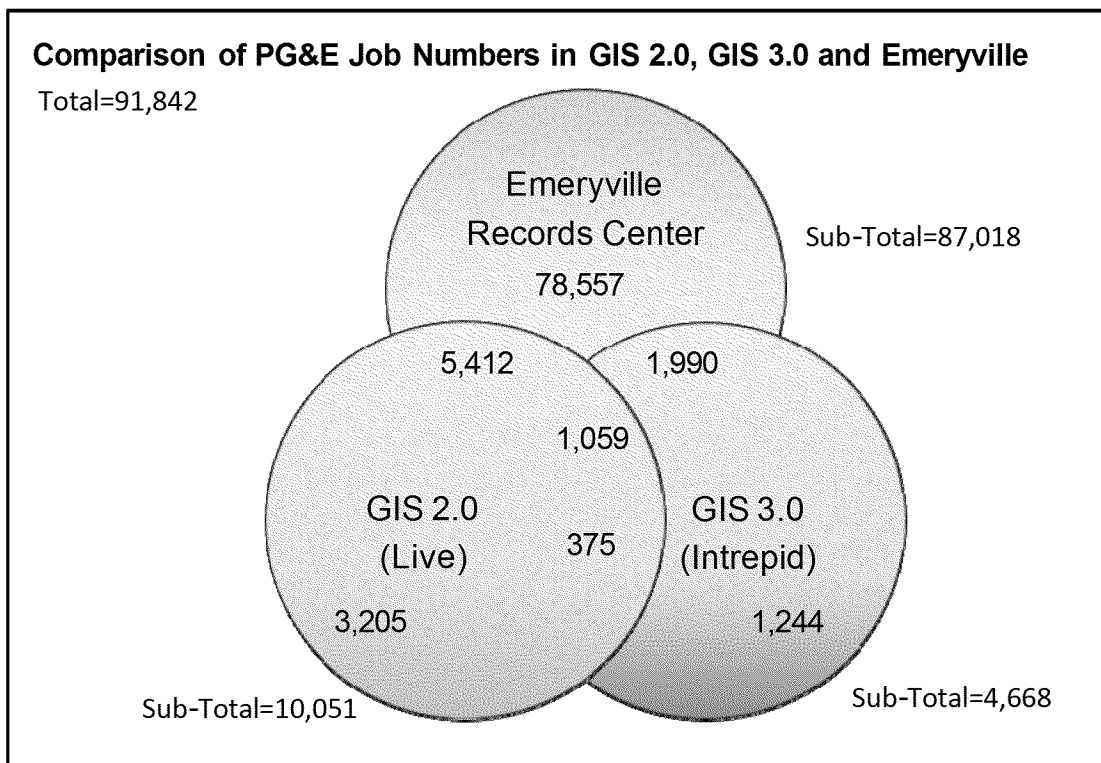
1 **Examples of Data Quality Inconsistencies between PG&E's New GIS (Intrepid) and**
2 **PG&E's Emeryville Job Folder Catalogue**

3

New GIS (Intrepid)	Emeryville Catalogue
4016-B	4016B
4024-C	4024C
47000D	4700D
fG99034	99034
EST39213	39213
GM101688	101688
GSR48301	48301
SO13433	13433
SP3351	3351
WO45399	45399
WO47604B	74604B
WO-45503A	45503A

4
5 It is not possible from PG&E's records to identify the exact number of 'missing' job files
6 and job folders. However, every job number in PG&E's GIS that is missing from the Emeryville
7 catalogue may equate to at least one corresponding missing job number that no longer exists
8 within PG&E. PG&E will have to wait until 2013 when their new GIS is fully populated in
9 order to ascertain the true size and scale of the number of missing job files and folders. What is
10 clear, however, is that we are not looking at the loss of a handful of pipeline files, but a
11 significant proportion of PG&E's entire collection.

12
13 In conclusion, the job numbers extracted from PG&E's partially populated GIS system
14 (Intrepid) provide additional strong evidence to support CPUC's contention that there are
15 thousands of job folders missing from PG&E's master collection of job folders held in
16 Emeryville. While a small proportion of these "missing" job numbers can be accounted for by
17 data quality errors in PG&E's data cataloguing and reconciliation process, the size and scale of
18 the Cow Palace exercise and the MAOP project being undertaken by PG&E precludes the
19 existence of large collections of physical job files now being discovered in PG&E in their
20 regional offices. This provides further evidence for PG&E's loss of control of its safety critical
21 records.



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Figure 5.11: A Comparison of PG&E Job Numbers in GIS 2.0, GIS 3.0 and Emeryville. [Please note that this analysis does not include the additional 15,048 Job Numbers recently discovered and reported to CPSD on August 18, 2012. CPSD reserve the right to submit a supplemental testimony once it has completed its analysis of this late submitted data].

The overlapping relationship between Job Numbers in PG&E’s GIS 2.0, GIS 3.0 and the corresponding Physical Job files as listed in the Emeryville catalogue is presented in Figure 5.11 above. Please note the significant number of Jobs that are recorded in the GIS systems but do not have a corresponding record and physical job file in the Emeryville catalogue.

5.12. PG&E is recording, cataloguing and indexing Job files inconsistently

Despite PG&E’s attempt to address CPSD findings by stating that “*the way job numbers appear in ECTS does not reflect PG&E’s historic job numbering system*”¹⁷⁸ and “*gaps between one gas transmission job number and another may reflect intervening gas distribution, electric, hydro and other projects*”,¹⁷⁹ CPSD does not maintain that each and every gap in sequence relates to a missing job file. However, PG&E’s own evidence discussed above indicates missing

¹⁷⁸ PG&E Response Testimony Page 3-36-9

¹⁷⁹ PG&E Response Testimony Page 3-37-16

1 job files from across most of the different job number sequences in use. This was confirmed by
2 PG&E's recent note¹⁸⁰ that as part of the MAOP Data Validation Project (July 10, 2012) it has
3 identified a further 15,045 Job files contained within the 107,700 boxes transferred to Iron
4 Mountain following the Cow Palace review. CPSD are pleased that PG&E has located these
5 previously missing job files that "*may be valuable for constructing PFLs (Pipeline Feature Lists)*
6 *for the remaining GIS routes*"¹⁸¹. This also vindicates CPSD's assertion of missing Job files
7 from the collections previously identified in our March 2012 testimony.

8
9 From a records management perspective CPSD fully appreciates that different numbering
10 systems may have been in use by PG&E over differing timescales. However, CPSD's contention
11 with regards to data quality is not that these numbering systems differed, but that the same job
12 file number is or has been recorded, catalogued and indexed inconsistently across PG&E's
13 disparate group of applications and databases. This has a direct impact upon the accessibility of
14 the related records and the overall success rate of any searches for them.

16 **5.13. MAOP Records Validation is not an excuse for large-scale destruction of records**

17 PG&E states that "*In December 2011, the AGA provided comments to PHMSA's August*
18 *25, 2011 Advanced Notice of Proposed Rulemaking.*¹⁸² *In those comments, the AGA wrote:*
19 *"AGA is raising the issue of MAOP records verification because it wishes to clarify the pipeline*
20 *safety code and emphasize that ASME B31.8 acknowledges that there will always be situations*
21 *where records will not be traceable, verifiable and complete"*¹⁸³. While this statement was made
22 to recognize incomplete or missing records in the industry, the statement provides no
23 justification for the large-scale misplacement and/or destruction of records that has occurred
24 within PG&E. PG&E goes on to state that "*over the years, many operators misplaced or*
25 *discarded various underlying source materials reflecting pipeline characteristics or operating*
26 *history after using such materials to establish a pipelines MAOP*".¹⁸⁴ However, PG&E fails to
27 show that "*establishing a pipeline MAOP*" has been a document retention criteria used to
28 legitimately trigger the PG&E or industry destruction of pipeline records.

¹⁸⁰ GasTransmissionSystemRecordsOII_DR_CPUC_070-Q02

¹⁸¹ GasTransmissionSystemRecordsOII_DR_CPUC_084-Q01 CPUC Data Request 84, Question 1

¹⁸² PG&E Response Testimony Page 1-14-14

¹⁸³ PG&E Response Testimony Page 1-14-16

¹⁸⁴ PG&E Response Testimony Page 3-7-32

1 **5.14. Data Quality Errors exist in PG&E’s Pipeline Related Systems**

2 PG&E highlights just two of the twenty two types of data quality coding errors or
3 inconsistencies identified by CPSD¹⁸⁵ in the ECTS database and implies that such errors had
4 been “introduced in the course of the MAOP validation effort”.¹⁸⁶ As we demonstrate repeated in
5 this chapter, PG&E has failed to appreciate the significance of CPSD comments with regard to
6 data quality and their impact upon PG&E’s pipeline-related databases and systems.
7

8 **5.15. PG&E did not have a system wide index of all its pipeline job files**

9 In its testimony PG&E acknowledges that “*prior to San Bruno, it did not have a system*
10 *wide index of all its pipeline job files*”,¹⁸⁷ but then goes on to infer that inefficiencies in their job
11 file retrieval process were simply “the by-product of a paper-based and decentralized records
12 management structure that had served the company well in an earlier era but had outlived its
13 usefulness”.¹⁸⁸
14

15 CPSD disputes this latter statement. PG&E’s job file retrieval inefficiencies were due to
16 the lack of division-wide document and records management controls, regardless of whether the
17 records were paper based, decentralized, or otherwise. The PG&E inefficiencies include, but are
18 not limited to the lack of a single index of all pipeline job numbers and job files, poor
19 engineering document control, and the absence of any job file tracking within the gas
20 transmission division. If PG&E had maintained a comprehensive index of all pipeline-related
21 job files, and their locations, they would have been in a far stronger position, from both a
22 legislative and safety perspective. The Cow Palace exercise could have been avoided, or reduced
23 greatly in scope, and both the NTSB and CPUC investigations handled in a far more efficient
24 and effective manner. Before San Bruno, PG&E’s long term integrity management and all other
25 aspects of gas safety that relies on accurate, complete, and accessible data would have been
26 greatly improved.
27

28 **5.16. Pipeline History Files containing original Pipeline information have been lost**

29 The integrity of PG&E’s entire gas transmission system is predicated upon PG&E
30 maintaining a complete, consistent and comprehensive set of pipeline records for the lifetime of

¹⁸⁵ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

¹⁸⁶ PG&E Response Testimony Page 3-36-17 to 3-36-21

¹⁸⁷ PG&E Response Testimony Page 3-38-24

¹⁸⁸ PG&E Response Testimony Page 3-39-3

1 the asset. To facilitate this, PG&E created a readily accessible and comprehensive set of
2 Pipeline History Files that were maintained in accordance with the 1969 policy listed in PG&E's
3 Pipeline Maintenance Handbook.¹⁸⁹ However, a decision was made in 1986,¹⁹⁰ to no longer
4 maintain the Pipeline History Records and only record key information (not all information) on
5 the pipeline summary sheets.¹⁹¹

6
7 One of PG&E's primary assets is its pipelines. As such, PG&E's loss of asset-based
8 pipeline history files removed one of the organizations primary points of reference to its
9 pipeline-related information. At some point in the 1990's the Pipeline History Files were
10 destroyed, however, to date PG&E has not been able to define when this occurred or who
11 authorized their destruction. The loss of this information, compiled and maintained in the
12 pipeline by pipeline manner it was, has clearly impacted PG&E's ability to access traceable,
13 verifiable and complete records in a timely and efficient manner (as evidenced by the Cow
14 Palace exercise and the MAOP project). Such action will have significantly weakened PG&E's
15 historical knowledge of its asset base. Furthermore, attempts by PG&E to cite the
16 'grandfathering' clause as a general defense of such action, do little to plug the loss of such an
17 important source of historical pipeline related information within the company. PG&E notes that
18 some information contained in the pipeline history file may have been derived from the Job files
19 themselves.¹⁹² However, it is clear from the descriptions provided in SP 463.7 that other unique,
20 primary information may have been contained in the pipeline history files and was also destroyed
21 during this process.

22
23 PG&E now regrets this decision stating, "*In retrospect, the company wishes it had*
24 *retained the pipeline history files*"¹⁹³ but then goes on to state in its testimony that most of the
25 information that would have been contained in its Pipeline History Files exists in pipeline survey
26 sheets, GIS or job files.¹⁹⁴ PG&E later represented to CPSD that it "*does not know whether all of*
27 *the life-of-the-pipeline records that had been saved under SP 463.7 as Pipeline History Files*
28 *exist elsewhere within PG&E today for all pipe that is still in its system*".¹⁹⁵ It remains to us as
29 records managers that the pipeline history files would have formed an extremely valuable

¹⁸⁹ CPUC_025-Q02(g)Supp01Atch01 CPUC Data Request 25, Question 2, Supplement 1, Attachment 1.

¹⁹⁰ "Telephonic Interview of [REDACTED]"; Investigation of: Pacific Gas & Electric Company September 9, 2010
Accident San Bruno, California; Docket.: DCA-10-MP-008; National Transportation Safety Board; June 27, 2011.

¹⁹¹ See Standard Practice 463.7, Effective 12/1/1969, Page 3. This was submitted as PG&E Supplement 1,
Attachment 1, in response to GasTransmissionSystemRecordsOII_DR_CPUC_025_Q02(g).

¹⁹² PG&E Response Testimony Page 3-53-22 to 3-54-10

¹⁹³ PG&E Response Testimony Page 2-23-3

¹⁹⁴ PG&E Response Testimony Page 3-53-22

¹⁹⁵ GasTransmissionSystemRecordsOII_DR_CPUC_067_Q11 Data Request 67, Question 11

1 reference collection of primary material, particularly in those instances where PG&E was unable
2 to identify the relevant job files.

3

4 **5.17. The ‘Grandfathering’ Clause did not exempt PG&E from its recordkeeping**
5 **obligations**

6

7 **Table 5.17: Retroactive and Non-Retroactive Subparts of Part 192¹⁹⁶**

8

Retroactive Subparts	Non-Retroactive Subparts
A. General	B. Materials
I. Corrosion	C. Pipe Design
K. Upgrading	D. Design of Pipeline components
L. Operations	E. Welding of steel in pipelines
M. Maintenance	F. Joining of materials other than by welding
O. Pipeline Integrity Management	G. General Construction requirements for transmission lines
P. Distribution Integrity Management	H. Customer meters, services, regulators and service lines
	J. Testing requirements
	N. Operator qualifications

9

10 PG&E’s testimony regarding “[t]he decision to grandfather these existing facilities” refers to
11 the decision by state and federal regulators not to require retroactive application of regulatory
12 requirements related to design basis and testing records.¹⁹⁷ PG&E claims exemptions under the
13 pipeline safety laws for pipeline facilities installed prior to 1971 from the Design, Construction
14 and Testing requirements in part 192 (the “non-retroactive subparts”). However, CPSD assert
15 that even based upon PG&E’s characterization of the TSI’s chart as shown above, the PG&E
16 pipelines must still meet applicable retroactive subparts requirements of part 192. (These include
17 Operation, Maintenance, Upgrading, Corrosion Maintenance, Pipeline Integrity Management and
18 Distribution Integrity Management requirements). As such, CPSD assert that the non-retroactive
19 subparts of part 12 cannot be used simply as an excuse for the total absence of records or poor

¹⁹⁶ PG&E states, “In implementing the regulations, OPS consistently exempted pipeline facilities installed prior to 1971 from the design, construction, and initial testing requirements in Part 192. The Transportation Safety Institute (TSI), the DOT training agency, provides a chart setting forth the retroactive and non-retroactive subparts of Part 192. The April 2010 DOT/TSI document, chart entitled "Pipeline safety Laws" (RH-45) (Ex. 1-10), provides, in part:”

¹⁹⁷ GasTransmissionSystemRecordsOII_DR_CPUC_067_Q25 Data Request 67, Question 25

1 recordkeeping practices, particularly when such records are also required for operation,
2 maintenance, and corrosion control during the life time of the pipeline or asset in question.

3
4 PG&E have received contradictory advice from their expert witnesses. PG&E state that
5 their testimony “conveys the principle that expectations regarding the completeness of pipeline
6 design basis and testing records must be tempered by the contours of the regulatory landscape
7 as it existed during the time that the pipeline was designed and tested. The testimony applies this
8 principle specifically to the 1956 design, construction, and testing of Line 132, Segment 180,
9 **when there were no state or federal pipeline regulations (including recordkeeping
10 requirements).** Thus, it is reasonable to expect that design basis and testing records created
11 during this time may not have been maintained, or may not contain the level of detail and/or
12 elements required by subsequently-enacted recordkeeping requirements within state and federal
13 regulations”.¹⁹⁸ This statement is based upon the testimony by [REDACTED] who states that
14 “there were no regulations in 1956 regarding recordkeeping for the gas pipeline industry”.¹⁹⁹
15 This contradicts the statement provided by Stephen Phillips in section 2A of PG&E's testimony
16 which highlights the existence of PG&E records retention standards and schedules dating back to
17 1 August 1938 as well as FPC regulations governing the preservation of records of public
18 utilities and licenses, effective August 1, 1938, with amendments to January 1, 1951 (see section
19 6.1).²⁰⁰

20 **5.18. PG&E was not aware of the distribution of reused pipe in its system**

21 PG&E states that “properly reconditioned pipe is safe, durable and reliable”.²⁰¹ PG&E is
22 expected to inspect and report upon all welding activity (including interior welds) of both new
23 and reconditioned pipelines. In the case of San Bruno, however, clearly the pipe was either
24 improperly manufactured, reconditioned or both. PG&E further believes a ten step process is
25 “likely representative of the process PG&E used when reconditioning other types of pipe” and
26 this process was intended “to assure our high level of certainty that the reconditioned pipe was in
27 excellent condition when reinstalled”.²⁰² However, if PG&E had followed such a process at San
28 Bruno, the visible lack of internal welds in the San Bruno pups would have invalidated the reuse
29 of them. PG&E lack of awareness of the distribution of re-used pipe in the gas transmission
30 system is discussed in section 4.4, violation C2 of this report.

31

¹⁹⁸ GasTransmissionSystemRecordsOII_DR_CPUC_067-Q25 CPUC Data Request 67, Question 25

¹⁹⁹ PG&E Response Testimony Page 4-2-9 to 4-2-12

²⁰⁰ PG&E Response Testimony Page 2-5-1

²⁰¹ PG&E Response Testimony Page 4-2-23

²⁰² PG&E Response Testimony Page 3-29-16

1 **5.19. PG&E’s GIS 2.0 had multiple data quality issues and is having to be replaced**

2 PG&E asserts that the data in its GIS does not constitute a violation of Section 451.²⁰³
3 While it acknowledges having no specific data on the quality control process for populating its
4 GIS system, it says it understands from individuals involved with GIS in its initial stages that it
5 conducted a form of quality control process when inputting information into GIS.²⁰⁴ It finally
6 acknowledges that data errors exist within the current GIS system (either from original pipeline
7 data or introduced during the transfer).²⁰⁵

8
9 It is difficult to understand how PG&E could ensure the data quality of its pipeline
10 databases and GIS systems, when it did not use a complete, consistent or comprehensive set of
11 primary records as a basis for its data compilation. The current GIS was populated with data
12 from a secondary/tertiary source, namely the Pipeline Survey Sheets, which themselves were
13 derived from Pipeline Density Survey Sheets (the precursor to the Pipeline Survey Sheets),
14 which in turn were compiled from Job File information.²⁰⁶ The fact that no attempt was made to
15 validate the content of the Pipeline Survey sheets against original data sources (Job files) as part
16 of the GIS data population exercise is a concern and may go some way to explain the data quality
17 errors encountered within the GIS for years before San Bruno.

18
19 PG&E recently conducted a study “*to assess the accuracy of gas transmission pipeline*
20 *records. Out of all records reviewed, 20% were found to be inaccurate record specifications,*
21 *and two instances impacted the MAOP of the line negatively*”.²⁰⁷

22
23 PG&E states that one of the functions of its newly formed Data Quality Group is to “*match*
24 *information system records (records in GIS, SAP, and Documentum) to the assets in the field*”.²⁰⁸
25 In light of the fact that CPSD had highlighted GIS data quality errors in its original testimony,²⁰⁹
26 we were surprised to see that PG&E is still perpetuating a number of the data quality errors in its
27 new GIS (Intrepid).

28

²⁰³ PG&E Response Testimony Page 3-66-13

²⁰⁴ PG&E Response Testimony Page 3-66-20

²⁰⁵ PG&E Response Testimony Page 3-66-26

²⁰⁶ GasTransmissionSystemRecordsOII_DR_CPUC_045-Q07, CPUC Data Request 45, Question 7

²⁰⁷ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch01

²⁰⁸ PG&E Response Testimony Page 1-23-8

²⁰⁹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

1 According to PG&E, its current GIS (Gas Map 2.0) is a source of information for the spatial
2 location of the gas pipelines, but at the same time, it is *not a system of record* for the spatial
3 location of gas pipelines. As-built drawings serve as the primary system of record for spatial
4 location of gas pipelines.²¹⁰ As such, the set of Job files numbers PG&E provided to CPSD from
5 their live GIS 2.0 should represent the minimum set that PG&E must have in its files today as
6 these are the files that inform them about the pipe that is currently installed. Each number
7 represents at least one segment (in some cases, more than one segment) in the transmission
8 pipeline system.

9
10 As explained in Section 5.12 of this testimony, CPSD analysis of job numbers²¹¹ in the
11 current and future GIS systems show that approximately 65% of the job numbers listed in GIS
12 2.0 and GIS 3.0 have one or more corresponding job folders listed in the Emeryville catalogue,
13 while approximately 35% of the job numbers listed do not. These figures show that “*missing*”
14 job files numbers are recorded in PG&E’s current and future GIS systems.

15
16 **5.20. Record quality is related to the quality of recordkeeping, not age of the pipe**

17 In section 3 of PG&E's testimony, John Zurcher states that a “*common sense and*
18 *historical perspective suggest that the quality of records maintained by pipeline operators will*
19 *vary with the age of the pipe in question*”.²¹² CPSD disputes this statement. The quality of the
20 records maintained, relate directly to quality of the document and records management programs,
21 systems and controls in place over the lifetime of the pipe, and NOT the age of the pipe in
22 question. In other words, those companies that managed and maintained control of their records
23 will have access to quality records, while those companies that have not, will not.

24
25 **5.21. PG&E’s existing GIS contains so many data quality errors that both it and the data**
26 **contained within it are being replaced**

27 PG&E has stated that its “*GIS database, serves as a primary source of information in the*
28 *integrity management program*” and that “*our integrity management program has been able to*
29 *rely on the data in GIS*”.²¹³ However, the level of confidence exhibited by PG&E in this section
30 of its testimony is at odds with PG&E's current perception of the data quality in its live GIS 2.0.
31 PG&E state that its enhanced GIS (intrepid) “*is being built from the ground up by leveraging*
32 *PFL (pipeline feature list) data rather than the data that is used to populate the existing GIS*”.²¹⁴

²¹⁰ GasTransmissionSystemRecordsOII_DR_CPUC_070-Q08 CPUC Data Request 70, Question 8.

²¹¹ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q06 CPUC Data Request 66, Question 6.

²¹² PG&E Response Testimony Page 3-7-28

²¹³ PG&E Response Testimony Page 3-54-3

²¹⁴ PG&E Response Testimony Page 1-22-25

1 This highlights the fact that the data quality issues within PG&E’s existing GIS render the
2 existing data unusable within the new system.

3
4 In an attempt to defend the quality of its GIS data, PG&E states that “*the use of GIS was*
5 *premised upon prior pipeline survey sheets and the accuracy of the data therein*” and was
6 “*consistent with industry practice*”.²¹⁵ PG&E goes on state that “*to populate GIS, we imported*
7 *pipeline data from existing pipeline survey sheets (themselves derived from precursor pipeline*
8 *density sheets derived from job files)*”²¹⁶, and accepted the accuracy of those records”.²¹⁷

9
10 PG&E also claims that some form of data quality control was in place to validate the data
11 inputting process.²¹⁸ However, despite ample sources of primary information contained in the job
12 files, PG&E did not attempt to validate the information contained on the pipeline survey sheets
13 with the primary information contained in the job files.²¹⁹ PG&E acknowledges that it is
14 “*aware that data errors exist within the current GIS system (either from original pipeline data or*
15 *introduced during the transfer)*”²²⁰ and that it “*does not believe that its current GIS system is*
16 *accurate or complete or that it contains a full set of required information for all numbered gas*
17 *transmission lines*”.²²¹ While PGE claims to “*have established a process by which field*
18 *personnel can identify data inaccuracies and update the information in the GIS*”, PG&E’s recent
19 statements indicate that the quality of data is such that it will not be transferring any of the
20 existing data from the live GIS 2.0 into its new GIS system 3.0 (Intrepid).

21
22 In PG&E’s own words, “*Data contained in Gas View 2.0/Gas Map 2.0 will not migrate*
23 *to Intrepid and will be retired when Intrepid is implemented for day-to-day use in 2013*”. Despite
24 this, PG&E goes on to state that “*in instances where (independent) information cannot be*
25 *identified, our use of conservative, assumed values in GIS is consistent with regulatory and*
26 *consensus industry guidance and does not prevent us from operating and effective integrity*
27 *management program*”.²²² CPSD disagree with this statement, and point to the fact that PG&E
28 lacked any record of the location of reconditioned, reused or salvaged pipe within its Gas

²¹⁵ PG&E Response Testimony Page 3-66-3

²¹⁶ GasTransmissionSystemRecordsOII_DR_CPUC_045_Q7 Data Request 45, Question 7

²¹⁷ PG&E Response Testimony Page 3-66-18

²¹⁸ PG&E Response Testimony Page 3-66-20 to 3-66-26

²¹⁹ PG&E Response Testimony Page 3-66-23

²²⁰ PG&E Response Testimony Page 3-66-26

²²¹ GasTransmissionSystemRecordsOII_DR_CPUC_067_Q13 Data Request 67 - Question 13

²²² PG&E Response Testimony Page 3-67-8

1 Transmission network²²³ and PG&E’s GIS 2.0 did not differentiate the original manufacture date
2 of re-conditioned pipe from date of its re-installation (see section 5.18).

3 **5.22. PG&E Mischaracterizes CPSD’s Testimony as Advocating Centralized Filing.**
4 **CPSD’s Assertion Was That PG&E Lost Control of its Records, Regardless of**
5 **Whether its Records were Centralized or De-centralized**

6 PG&E’s witness, Ms. Dunn, claims that PG&E “used a decentralized approach to
7 records management”²²⁴ and “By contrast, Dr. Duller and Ms. North are seeking a centralized
8 program”.²²⁵ Ms. Dunn goes on to assert that Dr. Duller and Ms. North in the CPSD March
9 2012 Testimony mention repeatedly and detail PG&E’s widely distributed job folders.²²⁶ She
10 goes on to infer that this one point is the basis for CPSD’s inflated overall assessment of PG&E
11 records management,²²⁷ and that the existence of multiple job folders located in different
12 locations, is by definition negative in CPSD’s view.²²⁸ She even goes so far as to assert that
13 CPSD seem to assume that central control is always more desirable than distributed control.²²⁹
14

15 To clarify, in response to Ms. Dunn, CPSD’s point is that PG&E lost control of its safety-
16 critical pipeline records. The fact that PG&E had decentralized filing is irrelevant to the central
17 fact that PG&E lost control of its records. As record managers, we have worked with many
18 companies that have instituted good controls over de-centralized records. PG&E could have kept
19 a de-centralized filing of its records and kept good control of them, but did not.
20

21 CPSD’s March 2012 testimony shows that PG&E lost control of its records both at a
22 centralized and at a de-centralized (office by office) level. There was no central catalogue or
23 master list recording which project files were held in which office.²³⁰ Also, PG&E responded
24 incorrectly by stating that its master project files were located in Walnut Creek, when in fact
25 there was not a master copy of each project file at Walnut Creek.²³¹ Moreover, during CPSD’s

²²³ This is particularly important as the age, specification and weld quality of reconditioned pipe may differ significantly from that of the line it is utilized within.

²²⁴ PG&E Response Testimony Page MD-16-10

²²⁵ PG&E Response Testimony Page MD-16-20

²²⁶ See for example PG&E Response Testimony Pages MD-16-23; MD-19-3; MD-19-10; MD-23-15.

²²⁷ PG&E Response Testimony Page MD-19

²²⁸ PG&E Response Testimony Page MD-23-14

²²⁹ PG&E Response Testimony Page MD-20-27

²³⁰ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, 172pp.

²³¹ Ibid.

1 review we saw no evidence of any standardized filing index in any of the offices, or any attempt
2 to compile one in Walnut Creek. File naming, numbering, duplication and version control errors
3 appear to have been common.

4
5 Further evidence that PG&E lost control of its records is illustrated by the Cow Palace
6 project where 30 man years of effort were required to identify the relevant job files from PG&E
7 offices. The need to centralize and gather together pipeline job files from across all of the Gas
8 Divisions 40+ offices and manually re-examine over 100,000 boxes of records at the Cow Palace
9 in early 2011 in order to understand what records existed, identify transmission-related pipeline
10 records and develop an index to them, serves to illustrate the magnitude of the document control
11 problem that PG&E faced in 2010 at the time of the San Bruno pipe rupture and fire.

13 **5.23. PG&E is unable to evidence its “travelling records management auditors”**

14 While PG&E agrees that it needs to incorporate better and stronger audit oversight
15 features into its records management program, it disagrees with CPSD’s assertion that past
16 PG&E retention programs lack audit and oversight features.²³² PG&E’s states that “*As early as*
17 *April 1950, the company decided to have travelling auditors’ review the condition of records in*
18 *the divisions to determine if responsible parties have been complying with the FPC’s 1938*
19 *records retention regulations*”.²³³ However, when questioned about this statement, PG&E has
20 been unable to identify the reports compiled by these “*travelling auditors*” and can offer no
21 evidence to support their claims that any such work was undertaken.²³⁴

23 **5.24. PG&E is unable to show records management analysis and reports from the 1980’s**

24 PG&E stated that it is currently unable to locate a copy of the 1983 records management
25 analysis performed by [REDACTED]²³⁵ as detailed in the transcripts of the National Transportation
26 Safety Board telephonic interview with [REDACTED]²³⁶ This shows that PG&E is not even able
27 to locate important analysis and reports from the past that discussed PG&E’s recordkeeping
28 problems or deficiencies historically. Since acknowledgement of records problems is the first
29 necessary step in addressing the problems, PG&E’s testimony itself demonstrates that the
30 company has performed poorly in this area.

²³² PG&E Response Testimony Page 2-11-14

²³³ PG&E Response Testimony Page 2-12-9

²³⁴ GasTransmissionSystemRecordsOII_DR_CPUC_070_Q13 Data Request 70, Question 13

²³⁵ GasTransmissionSystemRecordsOII_DR_CPUC_066_Q10 Data Request 66, Question 10

²³⁶ National Transportation Safety Board telephonic interview of [REDACTED] dated June 27, 2011, page 7, lines 12 through 14

1 **5.25. Recent PG&E Audits are now highlighting Records Management Issues**

2 After CPSD submitted its opening testimony in March, PG&E provided several late data
3 responses regarding records management related audits. Although finished after September
4 2010, CPSD believes these audits indicate current deficiencies that are the culmination of poor
5 records management from prior to September 2010. Copies of each of these audits are provided
6 as attachments to this report.

7
8 The first late filed data response shows the results of a recent internal PGE audit
9 (2/13/2012) regarding ‘Responses to Gas and Electric Safety Calls’.²³⁷ This audit identified three
10 medium risk issues relating to record retention. Firstly, PG&E does not have a formal written
11 policy that defines its retention requirements for recorded calls. Secondly, PG&E lacks a formal
12 service level agreement (SLA) that defines how the IT organization will ensure recorded calls are
13 archived timely and retained appropriately. Thirdly, PG&E’s retention requirements for GSR
14 service report cards and hazardous notices are inconsistently followed. For example, Area 2
15 retains the service report cards for one year and the hazardous notices for five to seven years,
16 while Area 3 retains the service report card for three months and hazardous notices for an
17 indefinite time.

18
19 PG&E also provided a late filed post-March testimony data response explaining the
20 results of a recent internal PGE audit (4/26/2012) regarding ‘Gas Leak and Odor Investigations’.
21 This audit concluded that the Utility's controls for investigating gas leaks and odors need
22 strengthening, and recommended that PGE improve controls over the quality of its records. The
23 audit found that there was no requirement for the routine review of electronic and hardcopy leak
24 investigation records to ensure their quality and to ensure that gas leak and odor investigations
25 are performed effectively. The lack of required routine review of gas leak and odor investigation
26 records inhibits PG&E’s ability to (a) detect and correct ineffective investigations and (b)
27 identify potentially incomplete or inaccurate documentation.²³⁸

28
29 PG&E’s late-filed data response also provided the results of a recent internal PG&E audit
30 (07/26/2012) regarding the ‘Pipeline Safety Enhancement Plan (PESP) – Hydrostatic Testing and
31 Welding’.²³⁹ This audit found that PG&E controls over general program recordkeeping were not
32 adequate, and that PG&E needs to develop and maintain a comprehensive recordkeeping strategy

²³⁷ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch02. Requested January, 12 2012,
Received August 16 2012.

²³⁸ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch03. Requested January, 12 2012,
Received August 16 2012.

²³⁹ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp05Atch04. Requested January, 12 2012,
Received August 16 2012.

1 that ensures all PSEP documents (paper and electronic), including those associated with
2 hydrostatic testing and welding, are collected, classified, and retained for permanent storage. The
3 audit also concluded that PG&E controls over PSEP welding procedures are not adequate. In
4 particular, PG&E needs to improve controls for ensuring that (1) each PSEP pipeline weld is
5 appropriately inspected, and (2) contract welding inspectors and radiographers qualifications are
6 vetted, and their work is periodically checked for accuracy and completeness.

8 **5.26. CPUC staff audited processes, records and results, not record keeping systems**

9 PG&E states that “*the commission staff has regularly audited and inspected the gas*
10 *safety records maintained in PG&E's divisions*”²⁴⁰. Although an audit may review specific
11 operation and maintenance records from the current or previous year(s), the purpose of doing so
12 is to assess the operating processes, procedures and results, not the consistency of the record
13 keeping practices themselves, and certainly not over the lifetime of the pipe in question. The
14 size, scale and distributed storage of PG&E's job folders, coupled with the lack of a single master
15 index of them, would have made previous audits of the recordkeeping process difficult, if not
16 impossible to undertake on anything other than an office-by-office basis.

18 **5.27. PG&E Post San Bruno Activities reflect the size & scale of the record management** 19 **problems faced**

20 In the aftermath of San Bruno, PG&E “*undertook an unprecedented effort to collect*
21 *physical records needed to verify the MAOP for class 3 and class 4 pipelines, as well as lines in*
22 *class 1 and 2 High Consequence Areas (HCA's) without prior pressure tests*”²⁴¹. CPSD
23 maintains that the size and scale of the document gathering exercise required (known as the
24 ‘Cow Palace’ project) provides additional clear evidence of how difficult it had become for
25 PG&E to impose any control upon its pipeline records. In order to achieve this, PG&E
26 voluntarily created its own centralized filing system for its pipeline records based in Emeryville.
27 The work undertaken by PG&E to date represents a relatively small part of a four-year program
28 of activity (the GTAM project, now renamed as Project Mariner) that PG&E deems necessary to
29 “*enhance the safety of PG&E's gas systems by dramatically improving the accessibility and*
30 *reliability of (PG&E's) pipeline information*”²⁴².

31 PG&E has commissioned its own study of document records management activities
32 within the Gas Transmission Division. This study has been undertaken by consultants from

²⁴⁰ PG&E Response Testimony Page 2-12-14

²⁴¹ PG&E Response Testimony Page 1-23-28

²⁴² PG&E Response Testimony Page 1-27-21

1 PricewaterhouseCoopers (PwC). With respect to PwC draft findings²⁴³ PG&E states that
2 “PG&E neither accepts nor rejects observations set forth in these draft and preliminary
3 documents”. “PG&E does accept that its consultants’ recommendations, as set forth in the PwC
4 final report, were based on their observations about the state of the Gas Transmission
5 Organization’s records management practices at the time the assessment was conducted”.²⁴⁴

6
7 PwC's final report presented to PG&E on March 31, 2012 contained a list of 59 specific records
8 and information management improvement recommendations.²⁴⁵ PG&E’s Response also
9 identifies its alignment of PG&E’s initiatives with PwC’s recommendations.²⁴⁶ However, a
10 significant proportion still remain under consideration or under review at this time.²⁴⁷ While the
11 implementation of the recommendations are not within the scope of this proceeding, CPSD
12 recognizes that their effective implementation is necessary in order for PG&E to improve its
13 recordkeeping. Additionally, CPSD is concerned that where a recommendation suggests that
14 PG&E “consider” something, or where PG&E suggests a recommendation is “under review” or
15 under consideration”, there is nothing that binds PG&E to act on these recommendations. In
16 particular, where PwC has recommended interim and long term Audit Plans,²⁴⁸ there is no
17 commitment by PG&E to follow this, or precisely what these Audit Plans will entail to ensure
18 records management that meets legal requirements and promotes the safety of PG&E’s system.
19 PG&E has not committed to implementing the PwC recommendations in full. With respect to
20 audits, PG&E stated that it “is currently working on both an interim and long term Quality
21 Assurance plan in which the PwC recommendations will be taken into consideration. The interim
22 Quality Assurance plan is expected to be complete by December 31, 2012”.²⁴⁹

23
24 PG&E goes on to state that: “PG&E is not in a position to state specific dates by which it
25 will address PwC’s recommendations”.... and that it “will finalize its plan on which
26 recommendations to follow from those identified as under consideration or under review after it
27 has hired the Gas RIM Director”.²⁵⁰

²⁴³ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i) Supplement Summary of Information Management Key Themes: PG&E Gas Mapping Organization , Internal PG&E report produced by PwC. January 18, 2012.

²⁴⁴ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07

²⁴⁵ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp04Atch01. Gas Operations Records and Information Management Assessment. Internal Report produced by PwC. March 31st 2012.

²⁴⁶ PG&E Response Testimony Page 1-30-1 Attachment 1D.

²⁴⁷ PG&E Response Testimony Page 1-29-11.

²⁴⁸ PG&E Response Testimony Page 1-35 to 1-36; PwC Recommendation Number D.13; and D.14.

²⁴⁹ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q09

²⁵⁰ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q08

1 Since the submission of the CPSD March 2012 testimony, PG&E has submitted both the
2 PwC Final Report and a detailed set of interview notes²⁵¹ compiled by PwC during their original
3 audit. The interview notes extend the breadth of records management related issues identified by
4 PwC to functions outside of PG&E's Gas Distribution Mapping Division. Appendix 1 of this
5 report contains a series of extracts from the PwC, that serve to highlight staff concerns about the
6 quality of record keeping in the Gas Transmission Division.

7
8 The PwC interview notes demonstrate that a year after San Bruno PG&E staff from
9 Engineering, Operations, Distribution and Testing functions were still reporting a litany of
10 records management related problems. These included: Conflicting standards; inadequate records
11 retention training; lack of manuals, Leak A-forms not being completed; jobs being tracked
12 differently from location to location; mismatches between Transmission Regulation and Field
13 Maintenance records; drawings and maps not up to par (e.g. local maps not being updated,
14 installed or abandoned pipelines not shown; timeliness and transposition errors on integrity
15 critical maps); the timeliness of MAOP data, missing procedures, departments struggling to find
16 documentation regarding design, updating, and new construction; compressor stations without
17 the most recent operating specifications; supervisors signing off A-Forms but not checking their
18 accuracy; jobs not being copied to the RMC (Records Management Center); poor quality data in
19 the GIS; document tracking; MAOP documents having to be double checked because records are
20 not completely accurate; no documentation/drawings for how the stations exist currently; the
21 flow of documents being worse than it was pre San Bruno.

22
23 While CPUC hopes that all of the issues identified by PwC will be addressed by PwC's
24 strategic recommendations and corrective actions, the issues highlighted by PG&E staff raise
25 fundamental concerns over the quality of records management activities and the accountability
26 for them within PG&E both before and after San Bruno. It will be important to ensure that
27 accountability issues in PG&E are addressed with regards to information and records
28 management, particularly as PG&E's CEO, Tony Earley recently stated²⁵² that "*prior to the*
29 *reorganizations that we've done, responsibility for the Integrity Management Program was*
30 *spread among the engineering organizations, some of the operating organizations, and there*
31 *wasn't clear accountability for that important program*".

²⁵¹ GasTransmissionSystemRecordsOII_DR_CPUC_060-Q14Atch01. PG&E Gas RIM Consolidated Detailed Interview Notes (Excluding Gas Distribution Mappers). Internal PG&E report produced by PwC. January 20, 2012.

²⁵²http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf; transcript & video.

1 **5.28. Resources**

2 PG&E’s testimony neither accepts nor rejects CPSD’s assertion²⁵³ that PG&E’s record-
3 keeping issues could have been addressed if PG&E had put the right people, process and systems
4 in place over time, and had provided clear records management guidance, direction with senior
5 management support to improve the way that its different offices and teams had managed their
6 records and shared information.

7
8 While PG&E’s testimony does not address the records management resource gap
9 identified by the CPSD March 2012 testimony, PG&E’s CEO, Tony Earley has stated²⁵⁴ that
10 PG&E has “*moved to separate the gas and electric businesses*” as “*when you combine gas and*
11 *electric companies the tendency is that the electric company dominates the business. It tends to*
12 *have more resources, tends to be larger, tends to have more visibility, and gas businesses get*
13 *under-resourced*” and commented “*if you read the reports like the NTSB report, it's absolutely*
14 *clear that's what happened at this company*”.

15
16 In the same press conference Tony Earley went on to state²⁵⁵ that “*Below the Officer*
17 *level, and particularly in the gas business, we have a number of people from major companies,*
18 *gas pipeline companies, gas LDC companies, that bring in experience from the industry that we*
19 *didn't have before*”. The resource gap that Tony Earley alludes to provides further evidence that
20 the problems at PG&E were systemic, brought on at least in part by the fact that PG&E did not
21 preserve or protect its information assets. PG&E does not appear to have recognized the true
22 value of its information assets and certainly did not invest in the integrated systems and
23 resources necessary to manage them.

24
25 **5.29. Pipeline History Files were a source of Primary Information**

26 PG&E acknowledges it cannot find the pipeline history files that were originally
27 maintained by its former records manager.²⁵⁶ Then, PG&E response testimony mischaracterize
28 CPSD’s March 2012 testimony by selectively stating that the pipeline history files were “*really a*
29 *secondary source of information*”²⁵⁷ and by inference, that the information contained in the
30 pipeline history files was of less importance or value than that contained in primary sources of
31 pipeline records such as the job files.

²⁵³ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, Page 1-10-26.

²⁵⁴ http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf

²⁵⁵ http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf

²⁵⁶ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q10 Data Request 66, Question 10

²⁵⁷ PG&E Response Testimony Page 2-21-15

1 The actual quotation in CPSD's March 2012 testimony, based upon the testimony of
2 [REDACTED]⁵⁸ stated that "*the pipeline history records were really a secondary source of*
3 *information, derived from a variety of primary sources such as the job folders*".²⁵⁹ CPSD then
4 go on to state that the pipeline history files "*were an invaluable source of information for*
5 *engineering staff as they provided a readily accessible and comprehensive, pipeline-centric view*
6 *of all the activities undertaken on, and the information available for, any given pipeline, or*
7 *pipeline segment*".²⁶⁰

8
9 Duller and North used the term "*secondary*" in this context to refer to the utilization of
10 the files (e.g. which files the engineers would use first and which they would use second), not the
11 contents of the files. PG&E has used this mischaracterization in a number of instances in their
12 testimony and subsequent data responses. PG&E has failed to acknowledge that the pipeline
13 history files were a comprehensive collection of primary pipeline history information that would
14 have formed an invaluable asset to the company had it been retained and maintained, particularly
15 in the absence of missing, misplaced or destroyed job folders. In retrospect, PG&E wishes it had
16 retained the pipeline history files, if only to respond to NTSB's recommendations and
17 commission directives.²⁶¹ However, CPSD still maintains that this collection of primary pipeline
18 records would have proved an invaluable source of information for design, construction, testing,
19 operations, maintenance, and integrity management activities, particularly in light of the large
20 number of missing or misplaced job files that are evidenced in this rebuttal testimony.

²⁵⁸ National Transportation Safety Board telephonic interview of [REDACTED], dated June 27, 2011.

²⁵⁹ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, Page 6-47-12 to 6-47-13.

²⁶⁰ Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, Page 6-47-13 to 6-47-16.

²⁶¹ PG&E Response Testimony Page 2-23-3

1 **5.30. Benchmarking**

2 PG&E alleges that CPSD made “no effort to benchmark PG&E’s past records practices
3 alongside those of other pipeline operators”.²⁶² However, CPSD’s remit did not include
4 instruction to benchmark PG&E’s past records practices alongside those of other pipeline
5 operators. CPUC Commissioner Florio’s Scoping Memo of November 21, 2011²⁶³ designates
6 that the first phase of this proceeding was to address PG&E’s past record-keeping practices.

7 In order to ascertain exactly where documents were stored at the time of the incident, and
8 understand the PG&E record-keeping practices and systems that were in place at that time, it was
9 necessary for CPSD to also understand what document consolidation work PG&E had
10 undertaken since the San Bruno pipeline rupture and fire. For that reason, we also examined
11 PG&E’s forward-looking MAOP validation efforts. In order to achieve the objective of the
12 study, a review, analysis and assessment were undertaken of PG&E’s records-related people,
13 processes, technology and historical records (physical and electronic) from 1955 to the present
14 day. PG&E’s defense that other operators’ recordkeeping was also deficient is irrelevant to this
15 case and is addressed succinctly in the Rebuttal Testimony presented by Julie Halligan.²⁶⁴

16
17 With regards to the internal benchmarking that was undertaken, CPSD’s views of PG&E
18 are remarkably similar to that of PG&E’s CEO Tony Earley who has stated that: “We have done
19 some really honest and objective benchmarking”. “We have seen some areas where we (PG&E)
20 fall short”.²⁶⁵ In addition, Mr. Earley has readily acknowledged that “in many areas we (PG&E)
21 are average or below average”. Even if it had been required, we are not sure what additional
22 value a sector wide records management study would have had.

23
24 **5.31. Not all of PG&E’s Pipeline-related Job Files were transferred to Emeryville: PG&E**
25 **has just identified over 15,000 ‘Missing’ Job Files in Iron Mountain**

26 In a data response filed with CPSD this week (18th August 2012), PG&E states that it is
27 continuing to identify and review its Job files²⁶⁶ and only recently, as part of the MAOP Data
28 Validation Project (July 10, 2012) identified a further 15,045 Job files within the 107,700 boxes
29 transferred to Iron Mountain following the Cow Palace review. PG&E states that these

²⁶² PG&E Response Testimony 0-1-22

²⁶³ I.11-02-016, "Order Instituting Investigation on the Commission’s Own Motion into the Operations and Practices of Pacific Gas and Electric Company with Respect to Facilities Records for its Natural Gas Transmission System Pipelines", Assigned Commissioner's Scoping Memo and Ruling, November 21, 2011.

²⁶⁴ I.11-02-016 Rebuttal Testimony of Julie Halligan, CPSD.

²⁶⁵ <http://www.pgecurrents.com/video/ceo-tony-earley-speaks-on-pge%e2%80%99s-progress-and-the-company%e2%80%99s-priorities/>

²⁶⁶ GasTransmissionSystemRecordsOII_DR_CPUC_070-Q02

1 previously missing job files “*may be valuable for constructing PFLs (Pipeline Feature Lists) for*
2 *the remaining GIS routes*”.²⁶⁷
3

4 **5.32. Policies and Procedures**

5 PG&E has not provided any evidence in its testimony to demonstrate that their
6 employees received, read, and understood the retention policies and procedures given to them.
7 Little evidence has been found within PG&E to illustrate the distribution, to staff of the standard
8 practices and procedures relating to the retention schedules and no evidence can be found to
9 show any training and education in the understanding and implementation of these practices.

10
11 For example, PG&E states that: “*In 2008, PG&E performed an internal audit of data*
12 *management practices. . . .The audit further found that many ‘business leaders, system owners,*
13 *and Compliance Champions’ do not have any data retention procedures in place, do not monitor*
14 *compliance with their data retention policies, or periodically confirm that the specified retention*
15 *periods are still valid.*”²⁶⁸

16
17 This provides further evidence of PG&E lack of records management and retention
18 controls prior to San Bruno. Policies and practices do little good if employees cannot understand
19 them, or if the directives are unclear or ambiguous.

²⁶⁷ GasTransmissionSystemRecordsOII_DR_CPUC_084-Q01 CPUC Data Request 84, Question 1

²⁶⁸ PG&E Exhibit 2-28, which responds to GasTransmissionSystemRecordsOII_DR_CPUC_025_Q08 Data Request 25, Question 8.

6. List of conflicts/contradictions

6.1. PG&E's experts disagree over gas pipeline recordkeeping requirements in 1956

PG&E's testimony by [REDACTED] states that "*there were no regulations in 1956 regarding recordkeeping for the gas pipeline industry*".²⁶⁹ This statement contradicts that provided by Stephen Phillips in section 2A of PG&E's testimony which highlights records retention standards and schedules dating back to 1 August 1938 and a circular letter dated May 17, 1951 originating from the (PG&E) company's vice president and general manager, enclosing a copy of the FPC regulations to govern the preservation of records of public utilities and licenses, effective August 1, 1938, with amendments to January 1, 1951.²⁷⁰ Moreover, the testimony of Julie Halligan discusses the reasons that the ASME B31.8 standards carry the weight of law. As shown in Table 9 of the opening report of Duller and North, these standards indeed had recordkeeping requirements for the gas pipeline industry in 1956.

6.2. Operating reality differed from corporate perception in relation to standards

PG&E states that their "*standards reflected how records move through the organization. In the case of PG&E's departments, records were historically maintained in the company's General Office until they were no longer frequently consulted. At that point the Department had the ability to centrally archive older records at the Bayshore Records Center and recall them for use, as necessary.*"²⁷¹

CPSD's findings in its March 2012 testimony indicate that as far as the gas transmission job files were concerned, this policy was only implemented in part, and that a far more decentralized approach to filing was undertaken within the gas transmission division.²⁷² This is confirmed by PG&E's own admission in the next paragraph that "*Divisions historically functioned with a high-degree of autonomy and took responsibility for their own facilities and records, many of which we used infrequently, but when used needed to be readily available locally*". This serves to illustrate how operating reality differed from corporate perception and documented standards.²⁷³

²⁶⁹ PG&E Response Testimony Page 4-2-9 to 4-2-12

²⁷⁰ PG&E Response Testimony Page 2-5-1

²⁷¹ PG&E Response Testimony Page 2-14-21

²⁷² Duller, P.R. and North, A. (2012) Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010. Consumer Protection and Safety Division, California Public Utilities Commission, San Francisco, California. March 5, 2012, Page 6-45-25 to 6-45-38; and 6-79-4 to 6-79-10.

²⁷³ PG&E Response Testimony Page 2-15-9

1 **6.3. Reconditioned Pipe Records should have been maintained by PG&E**

2 PG&E states that it *“has not, as best it is aware, lost records about reused pipe. Where*
3 *older records of this kind are lacking, it more likely is because they were not created”*.²⁷⁴ PG&E
4 does acknowledge that many job files, however, include records that sometimes demonstrate the
5 use of reconditioned pipe. While CPSD has demonstrated that many of PG&E’s job files are
6 missing (see section 5.12 of this testimony), PG&E has made no comment about the impact of
7 any ‘missing’ job files and related records, or the fact that missing historical pipeline records
8 would have also contained safety-critical pipeline information.²⁷⁵

10 **6.4. Reconditioned Pipe Records would have held details of one of the three causes of the**
11 **San Bruno pipeline failure**

12 PG&E cites the testimony of Robert Caligiuri defined three causes of the September 9,
13 2010 San Bruno Pipeline failure, and stated that one of them was a missing interior weld.²⁷⁶
14 PG&E states that it *“did not know about these circumstances; and if the Company had known it*
15 *would have addressed them”*.²⁷⁷ PG&E then goes on to state that *“The facts are that no operator*
16 *would likely have had records of a kind that would have prevented this terrible accident”*. This
17 statement conflicts with other elements of PG&E’s testimony, which state it would have
18 inspected and kept records of re-conditioned pipe.²⁷⁸ PG&E suggests it would have “thoroughly
19 inspected the pipe”. However, if it did that, it should have identified the missing interior weld
20 and documented it in its inspection records. As such, PG&E would have compiled records of
21 pipeline reconditioning of a “kind that would have prevented this terrible accident”. This fact
22 also undermines PG&E’s claim that “the San Bruno accident was not caused by missing,
23 inaccurate, or incomplete records”.²⁷⁹

²⁷⁴ PG&E Response Testimony Page 3-33-26

²⁷⁵ PG&E Response Testimony Page 3-33-26

²⁷⁶ PG&E Response Testimony Page 0-2-1

²⁷⁷ PG&E Response Testimony Page 0-2-9

²⁷⁸ PG&E states that “Properly reconditioned pipe is as safe as new pipe. When reconditioning pipe, PG&E would have taken steps to ensure that the reconditioned pipe was safe and in good condition for reuse, including thoroughly inspecting the pipe, cutting out any portion of the pipe that contained dents or was otherwise not suitable for reuse, preparing the ends of the pipe to properly accept welds, and rewrapping the exterior to protect against external corrosion.” (PG&E Response Testimony Page 4-4-5). PG&E further have clarified their position regarding reconditioning records. “In drafting this language, PG&E did not intend to imply that it would not have kept records of reconditioning. See Page 3-33 of PG&E’s June 26, 2012. Response for a discussion of the records that PG&E kept of reconditioned pipe.”

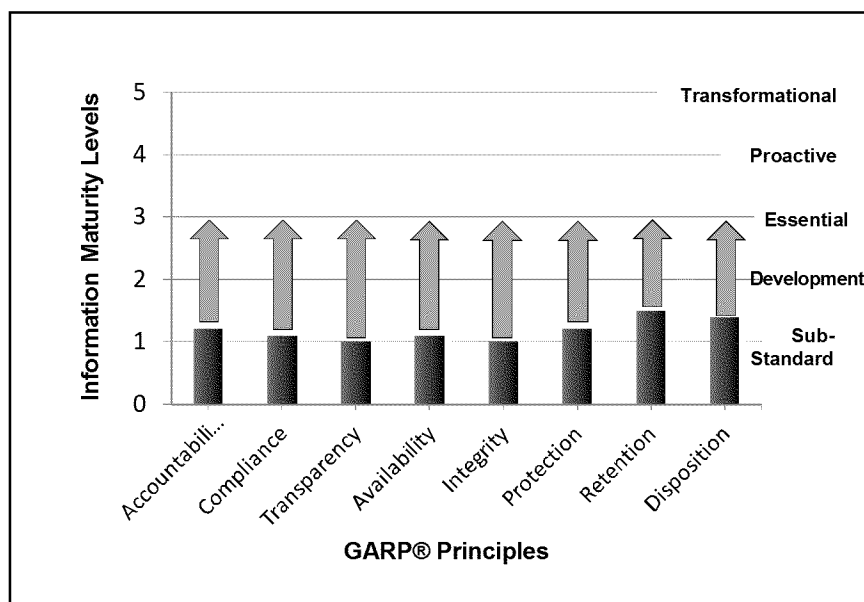
²⁷⁹ PG&E Response Testimony Page 0-1-34

1 **6.5. In Search of Excellence**

2 PG&E allege that the CPSD testimony and analysis “attempts to hold PG&E to an
3 aspirational standard of records management excellence one which only just now is gaining
4 recognition in the gas industry”).²⁸⁰ PG&E’s allegation is incorrect. CPSD did not use the words
5 “records management excellence” in its report. The CPSD testimony did not set targets or
6 recommendations for PG&E to adhere to. The highest level of the GARP benchmarking standard
7 is not “excellence”. As such, we are at a loss as to understand where this statement was derived
8 from. To clarify, CPSD expected PG&E to achieve a level 3 (ESSENTIAL) in order to be a
9 GARP-compliant organization. Higher levels 4 (PROACTIVE) and 5 (TRANSFORMATION)
10 are available should PG&E wish to set itself stretch targets. CPSD has refrained from such target
11 setting at this time.

12
13 As far as CPSD is aware, the only comments made about “Operational Excellence” have
14 been made by the PG&E CEO, Tony Earley in a recent video interview.²⁸¹ Mr Earley has also
15 publically stated “when I talked to the team that was here, they were hungry to find answers to
16 how they get back to the position of excellence that, for most of this company’s history, it has
17 been in”.²⁸²

18
19 **Figure 6.5: PG&E GARP Scores and the Gap required to meet Level 3 Compliance**



²⁸⁰ PG&E Response Testimony 1-2-6

²⁸¹ <http://www.pgecurrents.com/video/ceo-tony-earley-speaks-on-pge%e2%80%99s-progress-and-the-company%e2%80%99s-priorities/>

²⁸² http://www.pge.com/includes/docs/pdfs/about/newsroom/Press_Conference_12_12_2011.pdf

1 **6.6. Control of Policies and Standard Practices**

2 PG&E produced a memo dated October 9, 1987 to the “G.O. Department Heads” noting
3 that the standard practices listed, including Standard Practice No. 463.7 (pertaining to the
4 maintenance of pipeline history files), had been cancelled and therefore **should be removed and**
5 **discarded from the standard practice books.**²⁸³ However, despite PG&E’s assertion in its
6 testimony that “*When SP 463.7 was rescinded no later than October 1987, its life of the facility*”
7 *requirement was rescinded along with it*”²⁸⁴, PG&E later clarified this matter by stating that it
8 “*was not aware of any policies or standard practices that repeal standard practices to keep*
9 *pipeline history files*”.²⁸⁵ Standard practice 463.7 is cited by PG&E’s witness, Ms. Dunn as a
10 “*Good Example*” of how PG&E kept its staff informed of regulatory requirements.²⁸⁶ CPSD does
11 not understand how one PG&E memo can cancel a standard practice in 1987, and a later PG&E
12 manual can recognize that same supposedly cancelled standard practice in 1996.

13 **6.7. Retention**

14 In Chapter 2A of PG&E’s June 26, 2012 Testimony, PG&E stated that “*executives and*
15 *officers have exercised or have been assigned responsibility for records retention issues over*
16 *time, dating at least as far back as December 8, 1938, when the Vice President and General*
17 *Manager circulated the Federal Power Commission’s “Regulations to Govern the Preservation*
18 *of Records of Public Utilities and Licensees – Effective August 1, 1938” to the Heads of*
19 *Departments and Division Managers (see page 2-4)*”.²⁸⁷ Moreover, as discussed in response to
20 DR 23-35, the Corporate Secretary’s office began an annual “Compliance Certification” process
21 in September 2009, requiring every officer of the Company to confirm his or her respective
22 organization’s compliance with GOV-7001S – Record Retention and Disposal Standard.²⁸⁸
23 Despite this assertion, PG&E states that it is “*not aware of any responsibility for information*
24 *and records management at the board or directorate levels prior to the San Bruno incident*”.

25 ²⁸⁹

26
27

²⁸³ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q01, CPUC Data Request 066, Question 1, July 11, 2012

²⁸⁴ PG&E Testimony Page 2-22-8

²⁸⁵ PG&E Response to CPSD Data Request 066-Question 01, July 11, 2012.

²⁸⁶ PG&E Testimony Page MD-54. Specifically, Ms. Dunn referenced a History File Requirements Manual, dated February 14, 1996, and this manual includes Standard practice 463.7, the very one that the 1987 memo had said was cancelled.

²⁸⁷ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q03, CPUC Data Request 066, July 11, 2012

²⁸⁸ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q03, CPUC Data Request 066, July 11, 2012

²⁸⁹ GasTransmissionSystemRecordsOII_DR_CPUC_066-Q03, CPUC Data Request 066, July 11, 2012

7. Conclusions

In 1986, Richard Feynman²⁹⁰ was called to help the Rogers Commission investigate the Challenger disaster. He famously demonstrated how cold weather affected the elasticity of the rubber O-ring seals between sections of the solid rocket boosters, which had failed. However, as he later pointed out²⁹¹, this was only the accident's proximal cause. At the root lay an institutional failing – NASA's persistent adjusting of safety envelopes, to help speed up its process in order to keep to its launch schedule. Feynman revealed a disconnect between NASA's engineers and executives and warned in his appendix to the commission's report, "*For a successful technology, reality must take precedence over public relations, for nature cannot be fooled.*"²⁹²

The proximal cause of the San Bruno disaster has been stated in the testimony of Robert Caligiuri²⁹³ in the San Bruno as pipe failure resulting from a sequence of three things, a missing interior weld, a ductile tear and fatigue cracking. Our review of records management within PG&E at the time of the San Bruno incident, however, revealed a series of disconnects and institutional failure similar to that described by Feynman in NASA, most notably PG&E's inability to manage and control its safety critical gas pipeline and transmission records.

Where PG&E's testimony addresses what it has done since the San Bruno event, or what it may or will do in the future, it is outside the scope of this proceeding and our review. The only exception to this is where PG&E's future remedial efforts relate to its past deficiencies. This report has identified numerous examples of past deficiencies that PG&E's future remedial efforts are proposed to correct. PG&E has suggested it has made improvements to records management since September, 2010, and proposes to make improvements in the future. Even if those improvements are valid, they do not justify its past conduct. Moreover, this is an adjudicatory proceeding, addressing PG&E's past conduct, not its present or future conduct. Even in cases where PG&E is not prescriptively required by laws or regulations to retain certain record types in a certain fashion or for a specific period of time, PG&E is still required to use its best engineering judgment to promote the safety of its system. This is discussed in more detail in the testimony of Ms. Julie Halligan.

²⁹⁰ Richard Phillips Feynman (1918–1988) was an American theoretical physicist who during his lifetime, became one of the best-known scientists in the world.

²⁹¹ *What Do You Care What Other People Think?: Further Adventures of a Curious Character*, with contributions by Ralph Leighton, W. W. Norton & Co, 1988, ISBN 0-393-02659-0.

²⁹² R. P. Feynman. "Appendix F - Personal observations on the reliability of the Shuttle". Kennedy Space Center. <http://science.ksc.nasa.gov/shuttle/missions/51-l/docs/rogers-commission/Appendix-F.txt>.

²⁹³ OII 12-01-007

1 Where PG&E has attempted to suggest others in the industry have recordkeeping
2 deficiencies,²⁹⁴ this is not a valid excuse for PG&E’s failure to meet requirements to promote the
3 safety of its gas transmission system. This is discussed in more detail in the testimony of Ms.
4 Julie Halligan.

5
6 PG&E’s expert witness, Ms. Dunn misses comprehensive account of retention²⁹⁵
7 schedules, which are presented in CPSD’s March 12 report, Appendix 7, Section 8.7.2 from
8 Pages 8-145 to 8-150.

9
10 PG&E alleges that CPSD’s March 2012 testimony contains many conclusions and
11 inferences unsupported by fact.²⁹⁶ CPSD Disagree. Our testimony is based upon the information
12 provided by PG&E in a number of extensive data requests, as well as site visits, staff interviews
13 and an extensive statistical assessment of the data catalogues, original storage locations and
14 metadata relating to PG&E’s 87,018 unique job numbers and 140,000+ physical folders recorded
15 in their respective catalogues, databases and GIS systems. In fact, CPSD’s opening and rebuttal
16 testimony illustrate that the conclusions and violations identified are validly and logically
17 substantiated by facts.

18
19 PG&E’s current motto is “*Safety, Reliability, Affordability*”. However, PG&E has
20 steadfastly refused to accept that both the historical safety and reliability of its information assets
21 are predicated upon ready access to traceable, verifiable and complete pipeline records. While
22 PG&E is keen to promote its monumental records management efforts, post San Bruno, we
23 forget Feynman’s dictum at our peril.

²⁹⁴ See for example, Ms. Dunn testimony referencing ComEd Records Management Survey participants on Page MD-25, and explaining that “PG&E’s responses do not stand out from the pack” (MD-26, lines 3-4).

²⁹⁵ MD-15-4 to MD-15-9

²⁹⁶ PG&E Response Testimony Page 0-2-19

1 **Appendix 1: Final Assessment of PG&E’s Gas Operations Records and Information**
 2 **Management**

3
 4 This appendix contains a summary of the information and records-related observations
 5 indentified in PG&E’s Gas Operations Division by PG&E’s own management consultants,
 6 PricewaterhouseCoopers (PwC). The table below contains extracts from the PwC Final Report of
 7 March 31, 2012²⁹⁷ grouped by Table/Function for ease of reference. PG&E accepts that this
 8 report and the assessment of Gas Operations Records and Information Management “*were based*
 9 *on their (PwC) observations about the state of the Gas Transmission Organization’s records*
 10 *management practices at the time the assessment was conducted*” (Nov 2011 to Feb 2012).²⁹⁸

11
 12 **Table A1: Records and Information Management-related issues indentified in PG&E’s Gas Division by**
 13 **PG&E’s management consultants, PricewaterhouseCoopers (Final Report)**

14

Table No.	Category	Finding
12	Strategy	Gas Operations has relatively immature RIM Practices
12	Strategy	There is a lack of a Records and Information Management program strategy. There is a significant amount of strain in the organization with a substantial number of new efforts drawing resources and a significant amount of change. Existing strategies only partially incorporate RIM principles.
15	Governance	Organization lacks leadership support to enforce retention policy
15	Governance	There is no formal RIM governance structure in place within Gas Operations
15	Governance	There is no Gas Compliance Organization, but “Standards and Policies” group contains the key components. Policies and guidelines are not easily accessible to reference in paper form or electronic Many policies and guidelines are very long and confusing and sometimes conflicting.
15	Policies and Guidelines	Various retention schedules exist with different layouts and scattered throughout the organization.
15	Policies and Guidelines	Many policies, standards, and work procedures are out of date, sometimes in conflict , and employees do not always know about the most recent standard. Gas Operations is retaining documents that may not be necessary to retain after a certain period of time; and organization is missing some records that should be retained.

²⁹⁷ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i)Supp04Atch01. Gas Operations Records and Information Management Assessment. Internal Report produced by PwC. March 31st 2012.

²⁹⁸ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07.

15	Policies and Guidelines	Existing Retention Policy is not effectively nor consistently communicated across all business units.
19	Training	There is no records and information management (RIM) related training. Training for technical and people skills is not consistently effective. Some job-related training content is now irrelevant or outdated to the work performed and skills required today. Inconsistent practices across the organization, particularly among different physical office locations (even within the same functional roles). Supervisors are not always technically skilled in the areas they supervise; or are not always present to assist due to the wide service area that they manage.
19	Communication	Not all employees are willing to share information with colleagues, including new employees and staff in other departments. Communication from leadership is not always proving to be effective. In the absence of communication, employees do not always align with the company's vision and goals due to influence of more tenured employees Many field employees have not met or do not know their senior leaders.
22	Processes – RIM	Metrics are being created and reported on that don't appear to add value. Quantitative metrics sometimes conflict with the desired outcomes and benefits.
22	Processes – RIM	Historically, data quality and/or RIM issues have not been identified or recognized in a timely fashion, leading in some cases, to major failures and costly consequences.
22	Processes – RIM	HR utilizes an employee checklist that may not include all steps necessary upon an employee's departure or transfer to ensure business records and information in his custody (paper and electronic) is appropriately transitioned to Corporate for retention, preservation and management.
22	Processes – RIM	RIM Procedures and Controls are not consistently applied across the organization and are not integrated into business processes and procedures consistently.
22	Records & Information Lifecycle	Inconsistent processes for storing , organizing and managing records.
22	Records & Information Lifecycle	There is no clearly defined process to regularly review and refresh all RIM-related standards, retention schedule, processes and procedures for regulatory, organizational, system or other business changes.
22	Records & Information Lifecycle	There is no clearly defined comprehensive process to map regulatory recordkeeping requirements to business processes, record types and procedures. Different functions are responsible for different activities, such as tracking regulatory changes, updating procedures, communicating required changes to the retention schedule and assessing risk for Gas QA and Internal Audit plans.
22	Records & Information Lifecycle	Internal audits and QA processes include records and information management related observations / findings but are not based on a defined set of controls for records and information management. RIM is audited as part of business operational audits, but not conducted as a RIM program audit.

22	Gas Processes	Existing Gas Operations Business Processes do not follow a consistent information lifecycle.
25	Data (semi-structured)	Data quality is unreliable and missing in some data stores. This includes wrong information, missing information, and illogical information. Robust business requirements gathering does not always occur prior to system selection.
25	Data (semi-structured)	PG&E Gas Operations has numerous technology applications and systems where data is stored in parallel to paper-based records considered to be "official records". Electronically stored information (ESI) and physical records are decentralized.
25	Data (semi-structured)	PG&E stores a significant amount of data in stand-alone repositories such as SharePoint and Email.
25	Data (Unstructured)	Unstructured data repositories such as personal computers, mobile devices, intranet and network shared drives are largely ungoverned and need formal structure and guidance.
25	Business Applications	Existing systems and technologies are not fully leveraged for RIM. Lack of consistently applied standards and practices with regards to information captured Lack of defined system controls upon information input to facilitate data quality and ensure completeness. Interim solutions such as ECTS and 3rd party Intrepid are proving to be inadequate or challenging for other uses.
25	Business Applications	Systems used by Gas Operations are often disparate and not effectively communicating with each other. The current as-is GT Technology Architecture consists of numerous in-house "home grown" systems that are not integrated (Disparate Systems resulting in "islands" of data). Decentralized systems lead to lack of control and duplicative data across systems which undermine data integrity. GTAM has focused on key Transmission systems, but may not include all data stores currently leveraged by the Gas Transmission organization.
25	Business Applications	Current systems do not allow for 'freezing' of documents at a particular point in time to be reliably used for legal and contractual purposes.
25	Business Applications	Not all systems have a dedicated upgrade schedule to take advantage of new technologies or adapt to changing business needs.
25	Business Applications	The existing IT support resources are shared across the organization and are sometimes not able to meet Gas Operations' specific needs in a timely fashion.

1
2
3

1 **Appendix 2: Records-Related issues in PG&E’s Gas Division (excluding Mapping)**
 2

3 This appendix contains a summary of specific records-related issues indentified across
 4 PG&E’s Gas Division (excluding Mapping) by PG&E’s own management consultants,
 5 PricewaterhouseCoopers (PwC). The table below contains extracts from PwC’s draft Internal
 6 Report dated January 20th, 2012 issued to CPUC on the 13th July in response to Data Request
 7 60²⁹⁹ dated 14th May 2012. This report and extract compliments the PwC draft report and
 8 summary cited in Appendix 2, page 8-115 of CPSD’s original testimony.³⁰⁰ With regards to
 9 PwC’s draft assessment of the gas on division, PG&E states that “PG&E does not question
 10 CPSD’s ability to access such information” but provides a caveat that “PG&E neither accepts
 11 nor rejects observations set forth in these draft and preliminary documents”.³⁰¹
 12

13 **Table A2: Records-related issues indentified in PG&E’s Gas Division (excluding Mapping) by PG&E’s**
 14 **management consultants, PricewaterhouseCoopers (Draft Report)**
 15

Ref.	Function / Interviewee(s) : Issue
1	Codes & Standards: Karen Roth: There isn't consistency in the information stored in SP amongst the teams. Is there anything that's working well? - not really. Just feels we're really behind. Sure there are conflicting standards. There is a mapping manual - it's not available cause it's not electronic.
2	Human Resources: [REDACTED] & Glenda Scarborough: Records retention - they don't think it's very clear or has enough education to know what to dispose and when. Each department takes responsibility for their area of expertise and develops the retention policies and treated as the overall corporate guidelines.
3	Regulatory Compliance & Support: [REDACTED] & [REDACTED]: The Regulatory Compliance & Support group is responsible for records building (where station records are stored), estimating (pull information from the Land Department), mapping (once construction is completed), and complying with every code (including gas operations). Compressor stations have binders with operating specifications. The station won't always have the most recent binder. There were station and pipeline records containing redline diagrams at the station when San Bruno occurred, but when they started to collect all the records the center didn't really contain pipeline records.
4	System Planning: Trista Berkovitz, Prateek Chakravarty: Important decisions are made and communicated through email and are not kept centralized.
5	Integrity Management: [REDACTED]: Lines of communication need to be tightened up. Supervisors have to sign off on a lot of stuff like A forms, but aren't really checking the accuracy.

16

²⁹⁹ GasTransmissionSystemRecordsOII_DR_CPUC_060-Q14Attachment01. PG&E Gas RIM Consolidated Detailed Interview Notes (Excluding Gas Distribution Mappers). Internal PG&E report produced by PwC. January 20, 2012.

³⁰⁰ GasTransmissionSystemRecordsOII_DR_CPUC_025-Q02(i) Supplement-Summary of Information Management Key Themes: PG&E Gas Mapping Organization , Internal PG&E report produced by PwC. January 18, 2012.

³⁰¹ GasTransmissionSystemRecordsOII_DR_CPUC_071-Q07

6	Field Engineers: [REDACTED] & [REDACTED]: All jobs are tracked differently from location to location.
7	GC Distribution: Bob Suehiro: It's up to each individual on how to file and keep files in the field, which is a very inefficient process in regards to coded and non-coded materials. A-forms are not being completed by division employees.
8	Clerical, Estimating & Service Planning: [REDACTED], & [REDACTED]. Problem is that some jobs don't get to the RMC (Records Management Center). We know we have a certain number of jobs sitting in the local headquarters and the work has been completed but the clerks haven't received the package or they are still working with local construction folks to gather missing information.
9	M&C: Jodie Kubota & Steve Redding: Transmission Regulation (T&R) the valves and regulator stations are in SAP but most all the other work is in FM (Field Maintenance) report. Not matching up, not clear, there are certain timelines for leak surveys where you need to follow protocol and it's difficult because they're in different locations and it's nuts....There's certain work in FM (soil, corrosion info which is critical for integrity for the system), that is in FM except for 1 division (Sacramento). The rest of the work is in SAP - valves, valve maintenance and regulation maintenance. So you have 2 different documents if you're trying to keep up with the workload in 2 different repositories. Hydrostatic testing..... we're looking at maps because there are questions, they weren't updated accurately - could be from as-builts - transposed incorrectly.
10	Gas System Operations: Melvin Christopher: Areas of weakness - MAOP data. When we operate a pipeline, you can control valves and there may be 50 miles between the stations. And those different segments of pipelines will have different pressures. From a control perspective, we don't have a good link of that to understand that pressure. Operators say that's the engineer's problem and they need to figure it out. And engineers say operations need to track it. The challenge is more around the timeliness of the data and not sure if it's being addressed. We have multiple engineering groups determine changes of MAOP, but tracking all this and communicating it to Mel's group is where the problem lies because this isn't a gas operations function. Even if we have one central system, the translation of data could still be a problem. The GIS system isn't smart enough to do this, because it takes people or a process to understand the data.
11	Station Clerk/Maintenance Assistant: [REDACTED]: System wide, drawings are not up to par. In the past 10 - 15 years it seems that the drawings just aren't as important. Sometimes, pipelines are installed or abandoned but it's not shown on the maps. It was 4+ years before we got the drawings, and the drawings were unacceptable.
12	Estimator: [REDACTED]: Timeliness is a challenge. We used to have plat maps for emergency dig-ins, or shutoff place, and the local maps aren't upgraded. Everyone isn't at the same technology place in the field. In the old days the mappers would pull up the plat map and every couple years be updated. Losing the local bin maps and access to the maps has had some negative aspects.
13	Estimating Supervisor: [REDACTED] The flow and movement of documents is currently worse than it was pre San Bruno.
14	Methods & Procedures: [REDACTED]: So, where you can't get to the procedures,, who handles that? It's all over the board. There are many documents and procedures that could be developed.
15	Station Engineers: [REDACTED]: Department struggles with finding documentation around design work, updating, and performing new construction.

16	Drawings (Piping & Engineering Supervisor, Project Engineering) Diablo: Until 1990, changes were done by pencil, erased, and then updated but all were being done on the same drawing. This is where legacy problems are found; aperture cards were used to keep track of each version. From 1968 to 1995, every drawing was kept on the aperture cards (They took the drawing and made a microfilm card and put it into a card and ... stored (it) in a cabinet).
17	Pipeline Engineers: [REDACTED]: Just did a massive class study - pipeline systems outside of the stations have to be designed based on population density along a sliding mile. Did the study and found out that didn't classify the class properly. There is a certain yield strength that you can stretch the pipes for. The biggest challenge is GIS. In order to identify if the pipe is good; need the specs. Had to do a mini MAOP to determine if the pipes were ok. We had to dig and find so many records. We had to do a massive data mining ourselves. Have as-builts over a year old that are outstanding. Construction and people in the field don't always get the as-builts back to us in time.
18	Pipeline Safety: [REDACTED] & [REDACTED]: Main frustrations are around having so many processes and information in a complete state of flux. At the end of project trying to get the information into the right system but there's not just one system. Think everyone is trying to ensure for data quality but the problem is using GIS which just has bad data. For hydro testing and replacement... getting the data all shared and aligned is almost impossible. It's pretty mind-boggling the difficulty to line up the lines and segments. It may be easier to say here's the new system and throw away the old one.
19	Customer Service Delivery: [REDACTED]: PG&E is 18 yrs behind everyone else electronically. Unfortunately, with other things, financially for us, we haven't been able to keep up.
20	Codes & Standards: In the past, pipeline engineers would approve their own procedures and that model worked very well. Field workers need to have access to Procedures at their fingertips if they are supposed to use mobile devices. Employees don't feel many things are working well and that the company is really behind its competitors.
21	Hydrostatic Test Engineering: Ben Campbell: MAOP documents show if something has been tested or not. Everybody is double checking because sometimes the records aren't completely accurate. Also found when MAOP team originally did work, let's say if you have a job and then later it got tested, the team didn't really know what to do with those records. Also found the MAOP.... didn't have a way to take upgrade jobs. Where the original pipe was not tested but the upgrade was tested, they had lots of records like these they didn't know what to do with (110 miles of records).
22	CNG/LNG Operations: [REDACTED]: Station side - never really had engineer mgmt until about 4 years ago. They would swap out a compressor for a different model and there would be no documentation/drawings for how the stations exist currently. Been trying to get that documentation in place. There's only 35 stations, and the stations worked on physically in the last 5 years, so going on the assumption that everything else is inaccurate.
23	Gas Distribution Operations: [REDACTED]: Elimination of operating errors - there's no process to follow....Each division currently has its own philosophy. So, the binders are completely different in terms of style, some more detailed than others, some take it to the point where there are a tremendous number of valves to activate and others have less.