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APPENDIX C

Table of Violations for I.11-02-016 (Recordkeeping OII)

Appendix C

Table of Violations for I.11-02-016 (Recordkeeping OII)

	Violation (abbreviated description; see applicable conclusion of law for full statement of violation)	Duration	Pre-1/01/1994 Days in Violation	Post-1/01/1994 Days in Violation	Total Days in Violation
1	No records for salvaged pipe installed into Segment 180 - Violation of Public Utilities Code Section 451 (Felts Violation 1)	1956- September 9, 2010	13,698	6,095	19,793
2	Failure to create/retain construction records for 1956 project GM 136471 - Violation of Public Utilities Code Section 451 (Felts Violation 2)	1956- September 9, 2010	13,698	6,095	19,793
3	Failure to create/retain post-installation pressure test records for Segment 180 - Violation of Public Utilities Code Section 451 and ASME B.31.8 Section 841 (Felts Violation 3)	1956- September 9, 2010	13,698	6,095	19,793
4	Increase MAOP of Line 132 without conducting hydrostatic test - Violation of Public Utilities Code Section 451 (Felts Violation 4)	December 10, 2003 - September 9, 2010		2,465	2,465
5	Failure to Follow Procedures to Create Clearance Record - Violation of Public Utilities Code Section 451 (Felts Violation 5)	August 27, 2010 - September 9, 2010		13	13
6	Out of date drawings and computer diagrams of Milpitas Terminal- Violation of Public Utilities Code Section 451 (Felts Violation 7)	December 2, 2009 - July 2011		590	590
7	Failure to have accurate SCADA diagrams- Violation of Public Utilities Code Section 451 (Felts Violations 7 and 9)	December 2, 2009 - October 27, 2010		329	329
8	No Back-up Software at the Milpitas Terminal - Violation of Public Utilities Code Section 451 (Felts Violations 8)	September 9, 2010		1	1
9	Operated Line 132 in excess of 390 MAOP - Violation of Public Utilities Code Section 451 (Felts Violation 11)	December 11, 2003- September 9, 2010		2,464	2,464
10	Operated Line 132 in excess of 390 MAOP - Violation of Public Utilities Code Section 451 (Felts Violation 11)	December 9, 2008- September 9, 2010		639	639

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	Violation (abbreviated description; sec applicable conclusion of law for full statement of violation)	Duration	Pre-1/01/1994 Days in Violation	Post-1/01/1994 Days in Violation	Total Days in Violation
11	Operated Line 132 in excess of 390 MAOP - Violation of Public Utilities Code Section 451 (Felts Violation 11)	September 9, 2010		1	1
12	PG&E's Contradictory Data Responses Regarding Recorded Brentwood Camera 6 Video - Violation of Commission Rules of Practice and Procedure Rule 1.1 (Felts Violation 13)	October 10, 2011 - March 9, 2012		151	151
13	PG&E's Data Response 30, Q 8.d Did Not Identify All of the People in Milpitas Handling the Pressure Problem on September 9, 2010- Violation of Commission Rules of Practice and Procedure Rule 1.1 (Felts Violation 14)	December 17, 2011 - January 15, 2012		29	29
14	PG&E's Data Response 30, Q 2 Did Not Identify All of the People in Milpitas Handling the Pressure Problem on September 9, 2010- Violation of Commission Rules of Practice and Procedure Rule 1.1 (Felts Violation 14)	December 17, 2011 - January 15, 2012		29	29
15	PG&E's recordkeeping practices for Job Files adversely impacts ability to operate transmission pipeline system safely - Violation of Public Utilities Code Section 451. (Felts Violation 16)	1987 - December 12, 2012	2,376	6,928	9,304
16	PG&E failed to retain pressure test records for all segments of its gas transmission pipeline system - Violation of Public Utilities Code Section 451, ASME B.31.8, GO 112 through 112-B and PG&E's internal records retention policies (Felts Violation 18)	1956 - December 20, 2012	13,698	6,928	20,626
17	Weld Inspection Records Missing or Incomplete - Violation of Public Utilities Code Section 451, 49 CFR 192.241 and 192.243, ASME B.31.8, General Orders 112, 112-A, 112-B, section 107. (Felts Violation 19)	1955- December 20, 2012	14,064	6,928	20,992

Appendix C

Table of Violations for I.11-02-016 (Recordkeeping Oil)

	Violation (abbreviated description; see applicable conclusion of law for full statement of violation)	Duration	Pre-1/01/1994 Days in Violation	Post-1/01/1994 Days in Violation	Total Days in Violation
18	Operating Pressure Records Missing, Incomplete or Inaccessible - Violation of Public Utilities Code Section 451 (Felts Violation 20)	1955- December 17, 2004	14,064	4,003	18,067
19	Inaccurate and incomplete data in leak reports; missing leak records - Violation of Public Utilities Code Section 451 (Felts Violations 21 and 22)	1955 - December 20, 2012	14,064	6,928	20,992
20	Failure to retain records of reconditioned and reused pipe in transmission pipeline system - Violation of Public Utilities Code Section 451 (Felts Violation 23)	1940 - December 20, 2012	19,542	6,928	26,470
21	Failure to ensure the accuracy of data in GIS and to adopt conservative assumed values for missing data in GIS - Violation of Public Utilities Code Section 451 (Felts Violation 24)	1995 - December 20, 2012		6,382	6,382
22	PG&E unable to assess the integrity of its pipeline system and effectively manage risk - Violation of Public Utilities Code Section 451 (Felts Violation 25)	December 17, 2004 - December 20, 2012		2,925	2,925
23	Failure to retain metallurgist report concerning a 1963 fire and explosion on Line 109 - Violation of Public Utilities Code Section 451 (Felts Violation 27)	1963 - December 20, 2012	11,142	6,928	18,070
24	Inability to operate and maintain PG&E's gas transmission pipeline system in a safe manner due to poor records management activities - Violation of Public Utilities Code Section 451, GO 112 through 112-B, Section 107, ASME B.31.8. (Duller/North Violation A.1)	1955 - December 20, 2012	14,064	6,928	20,992
25	Failure to retain records of Leak Survey Maps - Violation of ASME B.31.8 Section 851.5. (Duller/North Violation B.1)	April 16, 2010- December 20, 2012		979	979

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	Violation (abbreviated description; see applicable conclusion of law for full statement of violation)	Duration	Pre-1/01/1994 Days in Violation	Post-1/01/1994 Days in Violation	Total Days in Violation
26	Failure to retain records of Line Patrol Reports - Violation of ASME B.31.8 Section 85L5. (Duller/North Violation B.2)	September 1, 1964 - December 20, 2012	10,714	6,928	17,642
27	Failure to retain records of Line Inspection Reports - Violation of ASME B.31.8 Section 851.5. (Duller/North Violation B.3)	December 17, 1991 - December 20, 2012	746	6,928	7,674
28	Failure to retain pressure test records - Violation of ASME B.31.8 Section 851.417. (Duller/North Violation B.4)	September 1, 1964 - December 20, 2012	10,714	6,928	17,642
29	Failure to retain records of transmission line inspections - Violation of ASME B.31.8 Section 851.5. (Duller/North Violation B.5)	September 1, 1964 - December 20, 2012	10,714	6,928	17,642
30	Failure to comply with internal records retention policies - Violation of 49 C.F.R. 192.13(c). (Duller/North Violation B.6)	1955- December 20, 2012	14,064	6,928	20,992
31	Failure to identify and include in all pipe segments with unusual longitudinal seams and joints for replacement- Violation of Public Utilities Code Section 451. (Duller/North Violation C.1)	June 1988- December 20, 2012	2,026	6,928	8,954
32	Failure to properly identify and replacing those pipelines that were prone to damage during severe earthquake- Violation of Public Utilities Code Section 451. (Duller/North Violation C.2)	June 1992- December 20, 2012	565	6,928	7,493
33	Failure to maintain comprehensive database for all gas leaks in transmission pipeline system - Violation of Public Utilities Code Section 451. (Duller/North Violation C.3)	1957 - December 20, 2012	13,333	6,928	20,261
	Total Days in Violation		206,984	143,205	350,189

APPENDIXD

Table of Violations for I.11-11-009 (Class Location O II)

Appendix D

Table of Violations for I.11-11-009 (Class Location OII)

Violation (abbreviated description; see applicable conclusion of law for full statement of violation)	Number of Segments (Violations)	Pre-1/01/1994 Days in Violation	Post-1/01/1994 Days in Violation*	Total Days in Violation
49 C.F.R. § 192.107 (b) (Assumed SMYS Values)	133	451,890	766,482	1,218,372
P.U. Code § 451 (Assumed SMYS Values Resulting in Excessive MAOPs)	133	451,890	766,482	1,218,372
49 C.F.R. § 192.13(c) (Not Following Procedures)	843	2,107,255	4,162,027	6,269,282
49 C.F.R. § 192.609 (Required Study)	224	542,030	1,095,373	1,637,403
49 C.F.R. § 192.611 (MAOP Confirmation/Revision)	224	542,030	1,095,373	1,637,403
49 C.F.R. § 192.613 (Continuing Surveillance)	677	1,723,956	3,346,447	5,070,403
49 C.F.R. § 192.619 (Non-Commensurate)	63	154,734	338,828	493,562
P.U. Code § 451 (Non-Commensurate)	63	154,734	338,828	493,562
TOTAL	2,360	6,128,519	11,909,840	18,038,359

*End Date January 17, 2012

(END OF APPENDIX D)

APPENDIX E

Adopted Remedies

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Adopted Remedies

Adopted Remedies Proposed by CPSD in All Three Oils

1 PG&E shareholders shall pay to reimburse CPSD for contracts retaining independent industry experts, chosen by CPSD, for the cost of verification audits and inspections to ensure compliance with the other remedies. PG&E shall also pay to reimburse CPSD for contracts retaining independent industry experts, chosen by CPSD in the near term to provide needed technical expertise as PG&E proceeds with its hydrostatic testing program, in order to provide a high level of technical oversight and to assure the opportunity for legacy piping characterization through sampling is not lost in the rush to execute the program.

2 PG&E shareholders shall pay to reimburse CPUC/CPSD for the cost of conducting all three of the present investigations.

Adopted Remedies Proposed by CPSD in I.12-01-007 (San Bruno Oil)

1 PG&E's pipeline construction standards shall meet or exceed all legal requirements and industry standards for identifying and correcting pipe deficiencies and strength testing.

2 PG&E shall revise its integrity management procedures to robustly meet the data gathering requirements of 49 CFR Part 192.917(b) and ASME-B31.8S, and to do so without limiting its data-gathering to only that data which is "readily available, verifiable, or easily obtained" by PG&E.

3 PG&E shall perform a complete company-wide record search to populate its GIS database with all identified gas transmission pipeline leak history, including closed leak, information not already transferred to the GIS.

4 PG&E shall revise its Integrity Management training to ensure that missing data is represented by conservative assumptions, and that those assumptions are supportable, per the requirements of ASME B31.8S. As required by Ordering Paragraph 1 of D.11-06-017, PG&E shall fully document any engineering-based assumption it makes for data that is missing, incomplete or unreliable. Such assumptions must be clearly identified and justified and, where

ambiguities arise, the assumption allowing the greatest safety margin must be adopted.

5 PG&E shall revise its integrity management procedures and related training, to ensure robust data verification processes are enacted and implemented.

6 PG&E shall revise its threat identification and assessment procedures and training, including its Baseline Assessment Plans, to fully incorporate all relevant data for both covered and non-covered segments, including but not limited to potential manufacturing and construction threats, and leak data.

7 PG&E shall re-label its system MAOP nomenclature in accordance with 49 CFR Part 192.

8 PG&E shall permanently cease the self-suspended practice of regularly increasing pipeline pressure up to a "system MAOP" to eliminate the need to consider manufacturing and construction threats. In addition, PG&E shall analyze all segments that were subjected to the planned pressure increases to determine the risk of failure from manufacturing threats under 49 CFR Part 192.917(e)(3), and perform further integrity assessments as warranted. Each assessment shall be documented and retained for the life of the facility.

9 PG&E shall revise its threat identification and assessment procedures and training to ensure that HCA pipeline segments are prioritized for a suitable assessment method (e.g., hydro-testing), per the requirements of 49 CFR Part 192.917(e)(3)-(4).

10 PG&E shall revise its threat identification and assessment procedures and training to ensure that cyclic fatigue and other loading conditions are incorporated into their segment specific threat assessments and risk ranking algorithm, and that threats that can be exacerbated by cyclic fatigue are assumed to exist per the requirements of 49 CFR Part 192.917(b).

11 PG&E shall revise its risk ranking algorithm to ensure that PG&E's weighting factors in its risk ranking algorithm more accurately reflect PG&E's actual operating experience along with generally reflected industry experience.

12 PG&E shall revise its threat identification and assessment procedures and training to ensure that PG&E's weighing of factors in its risk ranking algorithm and the input of data into that algorithm corrects the various systemic issues identified in the NTSB report and the CPSD/PHMSA 2011 Risk Assessment Audit.

13 PG&E shall revise its threat identification and assessment procedures and training to ensure that the proper assessment method is being used to address a pipeline's actual and potential threats.

14 PG&E shall review and implement its Inspection, Testing, and Maintenance procedure applicable to stations to ensure that integrity of electrical equipment, wiring and documentation and identification of electrical components does not deteriorate to unsafe conditions.

15 PG&E shall revise its SCADA system to reduce the occurrence of "glitches" and anomalies in the control system that desensitizes operators to the presence of alarms and other inconsistent information.

16 PG&E shall reevaluate SCADA alarm criteria with the goal of reducing unnecessary alarm messages.

17 PG&E shall revise its control systems, including SCADA, to ensure that all relevant information, including redundant pressure sensors, is considered.

18 PG&E shall install more pressure sensors and have them closely spaced and use the additional information to incorporate leak or rupture recognition algorithms in its SCADA system.

19 PG&E shall program its PLCs to recognize that negative pressure values are erroneous and require intervention to prevent valves from fully opening.

20 PG&E shall replace the three pressure controllers which malfunctioned on September 9, 2010 unless PG&E demonstrates to CPSD's satisfaction that the controllers have been removed from the system.

21 PG&E shall review its work clearance process to ensure that abnormal operating conditions that may arise during the course of work are anticipated and responses to those conditions are detailed. Additionally, PG&E shall create a procedure covering the commission of electrical equipment from one Uninterruptable Power Supply to another. Each project Clearance shall include possible scenarios and contingency plans to mitigate any abnormal operating conditions that may arise.

22 PG&E shall revisit its Work Clearance procedures and training to ensure that future work will not be authorized unless all forms and fields therein are comprehensively and accurately populated, and reviewed by a designated clearance supervisor. Additionally, work shall not commence until such time as the operator and technician have reviewed the work clearance and have

confirmed that both understand the actions to take in the event an abnormal condition is encountered. Lastly, PG&E must ensure that proper records showing the specific steps taken, when taken, and by whom, are maintained pursuant to its Record Retention Schedule.

23 PG&E shall provide training to Gas Service Representatives (GSRs) to identify hazards associated with PG&E natural gas infrastructure and take action to make the condition safe for the public and employees. If assistance is needed and the situation is an imminent hazard, the GSR will remain on site until appropriate resources take control. The training provided GSRs should enable them to recognize the differences between fires of low-pressure natural gas, high-pressure natural gas, gasoline fuel, or jet fuel.

24 Internal coordination - PG&E shall revise its procedures to outline each individual Dispatch and Control Room employee's roles, responsibility, and lines of communication required to be made in the event of an emergency either during or outside normal working hours. This shall include assigning specific geographical monitoring responsibilities for Control Room employees.

25 External coordination - Until PHMSA issues guidance to operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines regarding the importance of control room operators immediately and directly notifying the 911 emergency call center(s) for the communities and jurisdiction in which those pipelines are located when a possible rupture of any pipeline is indicated, PG&E shall revise its own procedures to allow for the immediate and direct notification of 911 emergency call centers when a possible pipeline rupture is indicated.

26 Decision making authority - PG&E shall revise its emergency procedures to clarify emergency response responsibilities, especially in regards to authorizing valve shut offs. PG&E policies shall not just delegate authority to act but also detail obligations to act.

27 RCV/ASV - PG&E shall perform a study to provide Gas Control with a means of determining and isolating the location of a rupture remotely by installing RCVs, ASVs, and appropriately spaced pressure and flow transmitters on critical transmission line infrastructure and implement the results.

28 Response time - PG&E shall review required response times in other utility service territories nationwide and devise appropriate response time requirements to ensure that its Emergency Plan results in a "prompt and effective" response to emergencies. PG&E will provide its analysis and conclusions to CPSD.

29 Emergency Plan Revision – Currently a maintenance supervisor annually reviews SCADA alarm responses and makes revisions as necessary. This process shall be formalized to ensure a robust feedback loop such that new information is fully analyzed and necessary changes to PG&E’s Emergency Plan and/or other procedures are implemented with a subsequent review of made changes to ensure they are adequate.

30 Public Awareness – Until PHMSA issues guidance to operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines regarding the importance of sharing system-specific information, including pipe diameter, operating pressure, product transported, and potential impact radius, about their pipeline systems with the emergency response agencies of the communities and jurisdiction in which those pipelines are located, PG&E shall undertake a review of its gas transmission public awareness and outreach programs to ensure that system-specific information is appropriately disseminated.

31 PG&E’s business strategies and associated programs shall expressly ensure that safety is a higher priority than shareholder returns and be designed to implement that priority.

32 Deleted.

33 PG&E’s gas employee incentive plan shall include safety. PG&E shall revise its STIP program to make safety performance 40% of the score used to determine the total award. PG&E shall require all gas leaders including officers to participate in annual training activities that enhance and expand their knowledge of safety, including exercises in which gas leaders including officers will have an opportunity to enhance their knowledge of incident command and will participate in an annual safety leadership workshop.

34 Deleted.

35 PG&E shall focus on enhancing public safety and operational excellence as a core mission, and shall examine whether the time and money it spends on public relations and political campaigns distracts it from this core mission.

36 Deleted.

37 PG&E shall examine internal communication processes to ensure that all employees understand their job responsibilities and priorities. Goals of PG&E gas employees shall describe what is expected of them and their teams.

38 PG&E shall follow and implement the following NTSB recommendations:

- 38.a Revise work clearance procedures to include requirements for identifying the likelihood and consequence of failure associated with the planned work and for developing contingency plans. (P-11-24)
- 38.b.1 Establish a comprehensive emergency response procedure for responding to large- scale emergencies on transmission lines; the procedure shall (1) identify a single person to assume command and designate specific duties for supervisory NTSB Pipeline Accident Report 131 control and data acquisition staff and all other potentially involved company employees.
- 38.b.2 Establish a comprehensive emergency response procedure for responding to large- scale emergencies on transmission lines; the procedure shall include the development and use of trouble-shooting protocols and checklists.
- 38.b.3 Establish a comprehensive emergency response procedure for responding to large- scale emergencies on transmission lines; the procedure shall include a requirement for periodic tests and/or drills to demonstrate the procedure can be effectively implemented. (P-11-25).
- 38.c Equip supervisory control and data acquisition system with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines. (P-11-26).
- 38.d Expedite the installation of automatic shutoff valves and remote control valves on transmission lines in high consequence areas and in class 3 and 4 locations, and space them at intervals that consider the factors listed in Title 49 Code of Federal Regulations Part 192.935(c). (P-11-27).
- 38.e Revise post-accident toxicological testing program to

ensure that testing is timely and complete. (P-11-28).

- 38.f Assess every aspect of the integrity management program, paying particular attention to the areas identified in this investigation, and implement a revised program that includes, at a minimum, (1) a revised risk model to reflect PG&E Company's actual recent experience data on leaks, failures, and incidents; (2) consideration of all defect and leak data for the life of each pipeline, including its construction, in risk analysis for similar or related segments to ensure that all applicable threats are adequately addressed; (3) a revised risk analysis methodology to ensure that assessment methods are selected for each pipeline segment that address all applicable integrity threats, with particular emphasis on design/material and construction threats; and (4) an improved self-assessment that adequately measures whether the program is effectively assessing and evaluating the integrity of each covered pipeline segment. (P-11-29).
- 38.g Conduct threat assessments using the revised risk analysis methodology incorporated in your integrity management program, as recommended in Safety Recommendation P-11-29, and report the results of those assessments to the Commission and the Pipeline and Hazardous Materials Safety Administration. (P-11-30).
- 38.h Develop, and incorporate into PG&E's public awareness program, written performance measurements and guidelines for evaluating the plan and for continuous program improvement. (P-11-31).

Adopted Remedies Proposed by CPSD in I.11-02-016 (Recordkeeping Oil)

1 PG&E's gas transmission organization shall achieve at least a Level 3 information maturity score under the Generally Accepted Records Keeping Principles within 3 years.

2 Rejected

3 PG&E shall issue a corporate policy and standard that will:

- 3.a Communicate recordkeeping expectations that underlie its post-2010 Corporate Records and Information Management Policy and Standard for all departments and divisions across PG&E. These expectations shall be incorporated into procedures specific to meet the needs of every Line of Business.
- 3.b The Information Management and Compliance Department shall design a governance controls catalog for recordkeeping practices to assess compliance with the corporate policy and standard, consistency of behavior with official records being stored in approved systems of record, and timeliness of addressing records during their lifecycle.
- 3.c The retention schedule will support the policy by providing retention length for all identified official records to meet legal and regulatory mandates.

4 PG&E shall develop and implement an education and training program for the gas transmission organization in Records and Information Management principles and practices within an information governance framework. The education and training program shall include the following:

- 4.a All staff shall be receive training to understand the responsibilities and tasks that relate to managing records. These education and training programs shall be updated and offered at regular intervals, at least twice annually, to include amendments to the records management program and for the benefit of new staff.
- 4.b There shall be specific and additional training for those staff involved directly in the management of retention and disposal of records. These education and training programs shall be offered at least annually.
- 4.c There shall be specific and additional training focusing on all of the recordkeeping systems used within the Gas Operations Organization. Employees and PG&E contractors who have duties using these programs shall be required to attend these training sessions. These education and training programs shall be offered at least annually.

5 PG&E shall develop and deploy the systems necessary to manage, maintain, access and preserve records (physical and electronic, in all formats and media types); their related data, metadata, and geographic location and

geospatial content to the extent appropriate in accordance with legal and business mandated rules, utilizing technology that includes appropriate aids to help improve data and metadata quality.

6 PG&E shall establish accountability for development and implementation of a PG&E governance strategy across gas transmission that shall rest with PG&E Senior Management and a method of accountability shall be developed and implemented.

7 PG&E shall identify and document the employees responsible for implementing the Records and Information Management program for gas transmission.

8 PG&E shall develop consistent standard practices that include gas transmission records management linked to corporate policies on information governance.

9 PG&E shall implement mandated retention periods for all records relevant to gas transmission.

10 PG&E shall ensure that each gas transmission standard conforms with Records and Information Management (RIM) policies for gas transmission.

11 PG&E shall include the treatment of active and inactive records in its Records and Information Management (RIM) Policy for gas transmission.

12 PG&E's records management processes shall be managed and maintained in accordance with the traceable, verifiable and complete standard, including retention of physical and digital pipeline records for the "life of the asset."

13 The accuracy and completeness of data within gas transmission records shall be traceable, verifiable and complete and when errors are discovered, the record shall be corrected as soon as correct information is available and the reason(s) for each change shall be documented and kept with the record.

14 PG&E shall create a standard format for the organization of a job file so that PG&E personnel will know exactly where to look in a file folder, or set of file folders, to find each type of document associated with a job file. At a minimum, a job file will contain traceable, verifiable and complete records to support the MAOP of the pipeline segment installed; design documentation; purchase documentation showing the sources and specifications of equipment purchased; permits; environmental documents; field notes; design, construction

and as-built drawings; x-ray reports and weld maps; pressure test records; correspondence with the CPUC; and inspection reports and correspondence.

15 Job file data, including drawings, for all parts of the active PG&E gas transmission system shall be immediately accessible from multiple locations. The development of a complete and accurate catalog of job files that can be searched immediately shall be included within this objective.

16 The information that was contained in PG&E's historic records and documents, and that has been identified as 'missing or disposed of,' and is necessary to be retained for the safe operation of the pipelines, pursuant to laws, regulations and standards and the PG&E retention schedule, shall be recovered. This recovery shall include but not be limited to:

- a. updating and verification of data in engineering databases, such as the leak database, GIS and the integrity management model,
- b. updating plat sheets and other engineering drawings, and
- c. updating and organizing job files.

When PG&E cannot locate records, it may apply conservative assumptions consistent with the requirements of Ordering Paragraph 1 of D.11-06-017. PG&E shall be required to fully document any engineering-based assumptions it makes for data that has been identified as "missing or disposed of." Such assumptions must be clearly identified and justified and, where ambiguities arise, the assumption allowing the greatest safety margin must be adopted.

17 PG&E shall document adoption of, and changes and amendments to policies, standards and procedures within the Gas Operations Organization (or its successor division(s) with responsibility for design, construction, operations, maintenance, testing, safety and integrity management of PG&E's natural gas pipeline system). The documentation shall include the reasons for adoption, amendment or cancellation of the policies, standards and procedures. An audit trail of changes shall be maintained, retained for as long as the standard is in effect. If a policy, standard or procedure is cancelled, a copy of the policy, standard or procedure in effect at the time of cancellation, as well as the reason for its cancellation, shall be preserved permanently, taking heed of potential changes in technology that may render documents unreadable in the future.

18 PG&E will identify each section of pipe that has been salvaged and reused within the PG&E gas transmission system. For each section of pipe identified, PG&E will change the installed date in its GIS and its IM model to the date the pipe was originally installed in the PG&E pipeline system.

19 Rejected. TURN proposed remedy 1 adopted instead.

20 PG&E shall implement the recommendations included in the final Pricewaterhouse Coopers (PwC) audit report. (TURN Exhibit 16, Appendix B).

21 Using independent auditors, CPSD will undertake audits of PG&E's recordkeeping practices within the Gas Transmission Division on an annual basis for a minimum of ten years after the final decision is issued in I.11-02-016.

22 PG&E will correct deficiencies in recordkeeping discovered as a result of each CPSD audit and will report to CPSD when such deficiencies have been corrected.

Adopted Remedies Proposed by CPSD in I.11-11-009 (Class Location Oil)

1 Systems: PG&E shall utilize industry-standard software for electronic storage of class location information. PG&E shall devise a process to capture new PG&E service hook-ups especially in proximity to transmission lines and incorporate into the class location analysis.

2 Procedures: PG&E shall update procedures, patrolling process instructions, and related Operator Qualification training to require written confirmation to Patrol Supervisors that follow up has been performed on all new construction that the patroller has previously observed and documented.

3 Procedure 6.3 (3) shall be rewritten as "List all new observations regardless if it is believed that the ground crew has already investigated the observation."

4 TD-4412-07 section 6.1 (2) shall include specific language for the pilot to recommended increased patrolling to the Aerial Patrol Program Manager.

5 PG&E shall ensure that the Report of New Construction forms are completed.

6 The Aerial Patrol Program Manager's duties shall be increased to include oversight and review of the quality and accuracy of patrol reports.

7 PG&E shall create a detailed procedures manual containing the Aerial Patrol Program Manager's duties to ensure quality control of aerial patrol responsibilities.

8 Training: PG&E shall utilize varied training exams for patrolling.

9 The new training exams for patrolling shall include questions with greater detail and complexity than the current exam and shall use aerial photos

as exam exhibits where pilots indicate which structures are approximately 660 feet from the right of way and would require reporting. Training materials and associated tests shall be reviewed and updated to enhance employee competency, utilize aerial photos and other aids, and reflect field conditions to approximate buildings' key distances from lines.

10 Improve Aerial Patrol Pilot training: PG&E's pilot training shall include aerial photographs taken at an altitude of 750 feet, which replicates what the pilots see on patrol, and include a number of structures both within and outside of the 660 foot standard. Use the photos as exam exhibits where the pilots indicate which structures are approximately 660 feet from the right of way and would require reporting. Training shall also include a Well-Defined Area (WDA) in the exhibit as well. PG&E shall also include in its training photographs, video or other aids to reflect expected views to be seen from typical patrol altitudes.

11 Audits the patrolling process shall include a comparison of new construction observations with new gas/electrical hook ups near the line to ensure that new construction has not been missed.

12 A new item "All Sections of Document Completed" shall be added to the audit checklist when reviewing Reports of New Construction.

13 Audits shall make sure that copies of completed Reports of New Construction are being provided to local supervisors, as required by standard procedure TD-4127P-01 section 3.8 (5).

Adopted Remedies Proposed by City of San Bruno

1 Recommendation V.B rejected.

2 PG&E shall reimburse CPSD for the costs of contracts to retain independent experts chosen by CPSD for verification audits and inspections to ensure compliance with the *PSEP Decision* and remedies ordered in this decision. This shall include CPSD's costs for hiring qualified independent auditors to audit and issue reports for both PG&E's MAOP Validation results and Project Mariner systems. If CPSD determines that it needs the services of outside consultants to develop additional capabilities to evaluate and assess the integrity of PG&E's pipeline system through the use of meaningful metrics, then the costs of such consultants will fall within the scope of this remedy. The reimbursement amount is capped at \$30 million.

3 Recommendation V.D.1 rejected

4 Recommendation V.D.2.a incorporated into CPSD adopted remedy 23 for I.12-01-007.

5 PG&E shall provide training to its Gas Service Representatives and Gas Control Operators to ensure that they coordinate effectively with emergency responders, follow PG&E's own internal procedures when responding to emergencies, and each GSR under Gas Control Operators' direction should be trained and able to manually shut off emergency shutdown zone valves. PG&E should also audit its GSRs and Gas Control Operators to ensure they are properly trained.

6 Recommendation V.D.2.c incorporated into CPSD adopted remedy 4 for I.11-02-016.

7 Recommendation V.D.2.d incorporated into CPSD adopted remedy 4 for I.11-02-016.

8 Recommendation V.D.2.e incorporated into CPSD adopted remedy 4 for I.11-02-016.

9 Recommendation V.D.2.f incorporated into CPSD adopted remedy 10 for I.11-11-009.

10 PG&E shall enter into Mutual Assistance Agreements with the cities, counties and fire districts within its service territory by no later than December 31, 2015. The Mutual Assistance Agreements shall formalize PG&E's emergency response role and disclosure obligations. A copy of each Mutual Assistance Agreement shall be maintained in the appropriate Division Emergency Plan.

11 Recommendation V.E rejected.

12 Recommendation V.F rejected.

Adopted Remedies Proposed by TURN

1 PG&E shall create a centralized database to track where it has placed re-used or otherwise reconditioned pipe in its system. For each such segment, the database should show the date of manufacture of the segment, if known. If this date is unknown, the database should so indicate, to ensure that the segment is given appropriate attention in integrity management. The database should include a link to reliable and readily accessible documentation showing, for each re-used or otherwise reconditioned pipe segment, that all steps necessary to prepare the segment for installation were performed and inspected. If such documentation is unavailable, the centralized documentation should so indicate so that the segment will be given appropriate attention in integrity management.

PG&E will maintain this database so long as there are sections of reused pipe in the PG&E operating gas transmission pipeline system.

2 Recommendation 2A incorporated into CPSD adopted remedy 4 for I.12-01-007.

3 Recommendation 2B incorporated into CSB adopted remedy 2.

4 Recommendation 3 incorporated into CSB adopted remedy 2.

Adopted Remedies Proposed by DRA

1 CPSD shall present a proposal to the Commission within 60 days of the effective date of this decision for a comprehensive audit of all aspects of PG&E's operations, including control room operations, emergency planning, record-keeping, performance-based risk and integrity management programs and public awareness programs, as recommended by the NTSB.

2 PG&E shareholders shall compensate TURN, CSB, CCSF and DRA for their reasonably-incurred litigation expenses, including the expert witness fees, in connection with these three proceedings. This will include expenses incurred from the initiation of the proceedings through the effective date of this decision.

(END OF APPENDIX E)