

APPENDIX B

PG&E's Responses to Proposed Remedial Measures



PWA'S RECOMMENDATIONS¹

FILED

Proposed Remedial Measure

PG&E's Response

PG&E's Alternative Proposal

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1. **Plastic Inserts and Stubs:** PWA recommends that PG&E examine the costs and benefits associated with undertaking a systematic identification and correction effort for unmapped plastic inserts and stubs, relying on the experiences of other utilities in dealing with these issues.²

PG&E has agreed to conduct benchmarking analyses to identify industry best practices in addressing unmapped stubs and plastic inserts, after which it will evaluate which of these best practices can be implemented at PG&E.³ Additionally, PG&E has already utilized new technology platforms and instituted multiple ongoing initiatives involving the use of analytical tools to identify and investigate potential unmapped assets and, where appropriate, proactively correct the related maps and records.⁴ Moreover, PG&E has implemented several backstop measures to reduce the potential risk of incidents involving unmapped assets. For example, PG&E created a Gas Carrier Pipe Checklist to verify the existence of potential plastic inserts in the field prior to conducting work, which PWA recognizes as “an effective backstop approach to PG&E’s unmapped or unrecorded plastic inserted lines.”⁵ PG&E also developed a process to use a Bolt on Saddle Punch Tee, a device that can be used to verify the existence of inserted plastic without penetrating the gas carrier pipe, which is described by PWA as a “very useful backstop measure.”⁶ PG&E also has been actively investigating new advanced technologies for detecting such unmapped assets.⁷ These initiatives demonstrate that PG&E is taking a proactive approach to continue to enhance its maps and records.

None.

¹ Ex. 1 at 75:25 to 76:29 (PWA Report).

² *Id.* at 75:25-32 (PWA Report).

³ Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 5-6:13-17, 5-8:12-17, 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh); *id.* at 6-15:29 to 6-16:8 (PG&E Reply Testimony, Thierry).

⁴ PG&E is continuously looking for new methods to gather intelligence from its newly digitized data in GD GIS and also using CAP mapping correction notifications to detect evidence of potential unmapped stubs or inserts. PG&E OB at 18-24; Ex. 4 at 4-16:18 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-25:14-26, 5-26:31 to 5-27:22 (PG&E Reply Testimony, Singh).

⁵ Ex. 1 at 65 tbl.9 (PWA Report); Ex. 4 at 5-8:21 to 5-10:8 (PG&E Reply Testimony, Singh).

⁶ PG&E OB at A-3, A-6 n.33; Ex. 1 at 68:9-13 (PWA Report); Ex. 4 at 5-10:12 to 5-11:15 (PG&E Reply Testimony, Singh).

PWA’S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>2. Stub Removal: PWA recommends that PG&E, considering risk tradeoffs, reexamine more aggressively eliminating existing stubs.⁸</p>	<p>Though this recommendation does not implicate recordkeeping issues, PG&E already has a policy in place for systematically identifying and, where appropriate, removing stubs.⁹ To assist the tracking and monitoring of potential stubs for removal, PG&E will use data captured from GSRs that have been integrated into GD GIS to create a centralized database of gas service stubs.¹⁰ PWA acknowledges that this is the type of stub removal program that it considers to be proactive.¹¹ In addition, PG&E is researching industry best practices regarding mapped stubs, as noted above.¹² Following the benchmarking analyses, PG&E will evaluate which of these best practices can be implemented at PG&E to potentially more aggressively eliminate stubs.¹³</p> <p>Moreover, PG&E’s backstop measures, such as the Quality Management Program, and ongoing improvements in training and procedures for locate and mark crews, reduce the likelihood of existing unmapped stubs resulting in potential significant incidents.¹⁴</p>	<p>None.</p>

⁷ For example, PG&E initiated an industry R&D project with the Gas Technology Institute in collaboration with other gas distribution system operators to investigate commercially available technologies to detect potential inserted plastic pipe in gas distribution steel lines. This project tested several possible detection methods in the laboratory, but none have proven feasible in the field. PG&E has also been supporting the efforts of a start-up company that is developing ultrasonic means that may identify potential plastic inserts, demonstrating PG&E’s continued commitment to identifying and developing new technologies that further build upon PG&E’s current methods and procedures. PG&E OB at 49, 56, A-3; Ex. 4 at 5-11:27 to 5-12:13 (PG&E Reply Testimony, Singh).

⁸ Ex. 1 at 75:33-36 (PWA Report).

⁹ PG&E currently monitors and, where appropriate, removes mapped stubs that are not deemed “useful.” To assist in this endeavor, on June 1, 2012, PG&E published a revised procedure that outlines the steps for monitoring and removing stub services. Ex. 4 at 5-6:21 to 5-7:7 (PG&E Reply Testimony, Singh); Ex. 7, Attachment W091 (Utility Procedure TD-9500P-16, Rev. 1, Deactivation and/or Retirement of Underground Gas Facilities).

¹⁰ PG&E OB at 18, A-1; Ex. 4 at 5-7:8-10 (PG&E Reply Testimony, Singh).

¹¹ Ex. 1 at 59 tbl.9 (PWA Report); Ex. 7, Attachment W095 at W095.007 (SED’s First Responses to PG&E’s Data Requests Sets 2 and 3) (stating that a formal stub program to eliminate stubs would be considered proactive).

¹² Ex. 4 at 1-7 (PG&E Reply Testimony, Howe).

¹³ *Id.* at 6-15:31 to 6-16:8 (PG&E Reply Testimony, Thierry).

¹⁴ PG&E OB at 16-17, 26-27, A-1 to A-2; Ex. 4 at 3-12:11 to 3-13:2, 3-16:1-30, 3-22:1-19 (PG&E Reply Testimony, Higgins); *id.* at 5-32:5-12, 5-33:12-22 (PG&E Reply Testimony, Singh).

PWA’S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>3. MAOP: PWA recommends that PG&E assess whether the method it used for setting the MAOP for some of its distribution systems creates additional risk and, if so, propose measures to address it. It also recommends that, when PG&E assesses what distribution systems to prioritize for replacement, the Company take into account the method by which it set MAOP for that system.¹⁵</p>	<p>The parties agree there is no basis to conclude that the method PG&E used for setting MAOP on the distribution systems at issue in this proceeding creates any safety risk.¹⁶ Nevertheless, in light of PWA’s recommendation, PG&E committed to comparing the leak survey results for the approximately 243 systems with MAOP set using the alternative method against PG&E’s other distribution systems to determine whether additional measures were necessary.¹⁷ PG&E has completed the MAOP risk analysis suggested in SED’s proposed remedy (h) and proposes to update that analysis once PG&E has completed the MAOP review identified in SED (g).</p>	<p>None.</p>
<p>4. Internal Audit: PWA recommends that the CPUC take advantage of the insights PG&E has gleaned from its internal audit process into potential soft spots in the massive change effort being undertaken by PG&E to help focus its inspections, perhaps on the adequacy of the action plan given the internal audit findings on the effectiveness of implementation, and on the impact of corrective actions.¹⁸</p>	<p>While this is not a recommendation for PG&E, PG&E supports this recommendation.¹⁹ PG&E’s Internal Auditing group (IA) performs audits to evaluate the effectiveness of controls on new and existing business processes, which allows management to then address any control gaps and check whether the processes are being implemented effectively.²⁰ As a reflection of the value PG&E places on its internal audit process, a Risk and Compliance Committee comprised of senior management is responsible for ensuring that corrective actions are implemented following an internal audit.²¹ PWA observed that, based on its review of IA reports and follow-up action plans, “PG&E management is making good use of these processes to monitor the impact . . . of [] its improvement programs.”²²</p>	<p>None.</p>

¹⁵ Ex. 1 at 75:37 to 76:2 (PWA Report).

¹⁶ PG&E OB at 56-62. PG&E’s distribution systems operate at considerably less than 20 percent of their maximum potential stress levels and accordingly operate with a significant margin of safety. *Id.* at 61. Moreover, these systems have been subjected to maintenance and operations requirements in accordance with the federal and state safety regulations. *Id.*

¹⁷ Ex. 4 at 5-21:4-20 (PG&E Reply Testimony, Singh).

¹⁸ Ex. 1 at 76:3-9 (PWA Report).

¹⁹ Ex. 4 at 1-8 (PG&E Reply Testimony, Howe).

²⁰ *Id.* at 5-22:16-19 (PG&E Reply Testimony, Singh).

²¹ Ex. 1 at 76:5-6 (PWA Report); Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 3-23:3-20 (PG&E Reply Testimony, Higgins).

PWA’S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>5. Plastic Inserts: PWA recommends that SED expand its practice of incorporating into its inspections an investigation of whether plastic pipe has been inserted in existing steel lines. PWA recommends that SED focus on the results of major maintenance activities undertaken subsequent to PG&E’s full implementation of GD GIS and its associated practices and procedures.²³</p>	<p>While this is not a recommendation for PG&E, PG&E supports this recommendation and looks forward to cooperating with SED’s efforts to identify unmapped plastic inserts, as noted above.²⁴ See PG&E’s Response to PWA’s Recommendation 1, <i>supra</i> p. C-1.</p>	<p>None.</p>
<p>6. Causal Analysis: PWA recommends that PG&E consider reexamining both how it defines “root cause” and how it integrates corrective actions related to those root causes into existing management practices.²⁵</p>	<p>PG&E has already followed this recommendation. In response to PWA’s recommendation, PG&E reexamined its existing policy for causal analysis, and it is substantially identical to the policy that PWA recommends; PG&E’s causal evaluation policies and procedures utilize a definition of “causal evaluation” that incorporates the objectives of root cause analysis that were outlined by PWA.²⁶</p>	<p>None.</p>

²² Ex. 1 at 75:3-6 (PWA Report).

²³ *Id.* at 76:10-13 (PWA Report).

²⁴ PG&E OB at 19-20, A-3; Ex. 4 at 1-8 (PG&E Reply Testimony, Howe).

²⁵ Ex. 1 at 76:14-29 (PWA Report).

²⁶ See Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 5-28:26 to 5-31:10 (PG&E Reply Testimony, Singh). PG&E’s causal evaluation standard defines a causal evaluation as “a structured process used to determine, document and communicate the cause or reason why an incident, issue or error occurred. [Causal evaluations] are necessary to identify the cause of the incident, issue or error, to prevent or minimize the probability of recurrence and to apply continuous improvement.” Ex. 7, Attachment W114 at W114.001 (Utility Standard GOV-6102S, Enterprise Causal Evaluation). This definition incorporates the “objectives” of the root cause analysis outlined by PWA, as the Standard requires the identification of the cause and contributing factors, corrective actions, and lessons learned that will inform continuous improvement. Ex. 4 at 5-30:26 to 5-31:10 (PG&E Reply Testimony, Singh).

SED’S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>a. Systemic Review of Records: PG&E should conduct a systemic review of its records to determine if there are other categories of missing records of the same magnitude as the missing De Anza records. Within 90 days of a final Commission decision in this matter, PG&E should file a report that identifies all of the categories of missing records for its gas distribution system identified in this review and an assessment of how the records were lost.</p>	<p>PG&E acknowledges that it does not have perfect records. Like other utility companies, PG&E faces challenges with records that in many instances date back many decades, particularly given that PG&E is the product of hundreds of acquisitions that started in the late 19th century.²⁸</p> <p>SED already has requested that PG&E identify known missing document types during discovery. In response to this data request, PG&E explained that some missing or incomplete information may exist currently or may have existed at some time in the past in nearly every category of PG&E’s gas distribution asset records, and in particular, through its due diligence efforts, identified the De Anza records and the MAOP records.²⁹ Thus, PG&E interprets this proposed remedy as seeking the identification of <i>additional</i> categories of records that have not already been described in this proceeding.</p> <p>SED’s proposed remedy is exceedingly broad: It directs PG&E to conduct a systemic review to identify all categories of missing records, without any recommendation on how PG&E would conduct such a review of millions of records. Moreover, it directs PG&E to do so and to file a report, within 90 days of a Commission decision.</p> <p>This remedy does not consider the fact that PG&E has embarked on an ambitious project to digitize all its distribution records, and in doing so, has undertaken a number of initiatives to identify potential gaps in its records during the migration of asset data to electronic databases such as GD GIS.³⁰ These efforts—which are in line with PG&E’s long-term efforts to continue to enhance its records—take years, not days.</p>	<p>PG&E shall:</p> <p>(1) Define activities to develop an extent of condition plan for potential missing GSRs and as-built records for gas distribution mains within 90 days of a Commission decision.</p> <p>(2) Develop an associated extent of condition report based on item (1) with recommended actions within 90 days of decision.</p>

²⁷ SED OB at 94-96.

²⁸ Ex. 4 at 1-2:13, 1-10:23 to 1-15:9 (PG&E Reply Testimony, Howe).

²⁹ See, e.g., Ex. 33 (PG&E’s Supplemental Response No. 1 to SED Data Request No. 25).

³⁰ PG&E OB at 19, A-1; Ex. 4 at 2-19:3 to 2-22:26 (PG&E Reply Testimony, Singh).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p><i>(continued)</i></p>	<p>This proposed remedy, as well as proposals (b) and (c) below, is far broader than the six PWA recommendations or SED's proposed remedies (d), (e), (g), and (h), which are tailored to address the issues directly raised in this proceeding. As described above, PG&E has already agreed to implement PWA's recommendations. PG&E cannot realistically implement numerous broad-based programs all at once to search for all missing records or missing assets; instead, it should allocate its focus to prioritize measures that will most enhance its system safety. Thus, while PG&E agrees that having perfect records is an aspirational goal, it respectfully disagrees with this remedy as drafted.</p> <p>Rather than adopting a broad, unspecified remedy to identify all categories of missing records, PG&E proposes an alternative that focuses on efforts not yet implemented that would continue to improve the Company's distribution records and enhance safety.</p> <p>It is undisputed that PG&E's primary distribution "records" consist of: (1) plat maps; (2) Gas Service Records (GSRs); (3) A Forms; and (4) as-built records for gas distribution mains.³¹ PG&E's response therefore addresses each of these types of records:</p> <p><u>Plat Maps:</u> As part of the process of converting PG&E's existing distribution asset data from MET to GD GIS, approximately 21,000 individual plat maps were migrated to GD GIS as one continuous map for its entire system.³² During this conversion process, anomalies in the data being converted—including differences in the descriptions of assets mapped across contiguous plat maps—were automatically flagged through the PAR process, which is a process set up to ensure that any such discrepancies are investigated and resolved.³³ PWA evaluated the PAR process as an "innovative practice."³⁴</p>	

³¹ Ex. 4 at 2-10:28-31 (PG&E Reply Testimony, Singh).

³² *Id.* at 2-13:18-21 (PG&E Reply Testimony, Singh).

³³ PG&E OB at 19, A-1; Ex. 4 at 2-19:6-23 (PG&E Reply Testimony, Singh).

³⁴ Ex. 1 at 59 tbl.9 (PWA Report).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>(continued)</p>	<p><u>As-Built Records</u>: As a result of the Gas Distribution Mains As-Built Digitization initiative that began in 2015 and is projected to be completed in 2017, nearly 10 million historic paper as-built records will be scanned and made available electronically.³⁵ Once all of these records are scanned, PG&E will be able to explore the feasibility of using analytics to identify potential missing as-built records for gas distribution mains, if any.</p> <p><u>A Forms</u>: A Forms are used to document leak information and to determine pipe replacements. PG&E's mappers primarily use GSRs to perform mapping updates.³⁶ Since 1970, PG&E captured leak repair data from A Forms in electronic databases,³⁷ and SED has presented no evidence to suggest that this procedure was not followed. PG&E is currently undertaking efforts to analyze this electronic A Form data to identify any potential unmapped plastic inserts.³⁸ This type of practical analytics will yield far more dividends in improving PG&E's distribution safety than SED's broad directive.</p> <p><u>GSRs</u>: PG&E completed scanning more than 6 million of its paper GSR records by 2015. The Company is in the process of uploading and entering these scanned GSRs into GD GIS so that they will be accessible electronically. Once the data has been entered into GD GIS, PG&E believes it could leverage analytic tools to identify potential missing GSRs, if any.</p>	

³⁵ PG&E OB at A-2; Ex. 4 at 2-11:7-9 (PG&E Reply Testimony, Singh).

³⁶ PG&E OB at 25-26, A-1; 1/21/16 Tr. at 412:7 to 413:5 (PG&E/Trevino).

³⁷ 1/21/16 Tr. at 468:24 to 469:10 (PG&E/Singh).

³⁸ PG&E OB at 25-26; Ex. 4 at 4-15:18 to 4-16:17 (PG&E Reply Testimony, Trevino); *id.* at 5-11:17-24 (PG&E Reply Testimony, Singh).

SED’S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>b. <u>Report on Systemic Review:</u> Within 90 days of a final Commission decision in this matter, PG&E should file a report based on a systemic review of its distribution system to ensure that all of its facilities are accounted for. PG&E should leverage information gathered from its field personnel and various sources, such as its Corrective Action Program (CAP), to determine any negative trends that impact the completeness and accuracy of its records and maps.</p>	<p>This proposed remedy is exceedingly broad as it seeks a systemic review to ensure that <i>all</i> of these facilities are accounted for, and to do so within 90 days of final Commission decision. No operator can prove with certainty—aside from taking extreme actions, such as digging up every inch of underground assets—that it has accounted for each and every facility. SED’s own expert, PWA, acknowledges that no operator has been able to do so.³⁹</p> <p>This proposed remedy also does not consider the fact that PG&E has implemented numerous initiatives to continuously improve its records consistent with regulatory requirements.⁴⁰ PG&E is also continuously improving its damage prevention program and L&M personnel have many means to locate; they do not rely solely on maps.⁴¹</p> <p>As discussed in response to proposed remedy (a), this type of blanket directive is far less effective in improving safety than measures—like the Recommendations proposed by PWA or SED’s Proposed Remedies (d), (e), (g), and (h)—that directly address the issues raised in this proceeding. It would take away focus from other critical work that is more effective at risk reduction. Thus, PG&E respectfully disagrees with this remedy as drafted.</p>	<p>PG&E shall:</p> <p>(1) Complete the planned effort to compare existing PG&E meter data in CC&B to GD GIS, along with relevant ancillary data such as aerial imagery, where appropriate, by December 30, 2016. PG&E will subsequently update GD GIS, as required.</p> <p>(2) Conduct a trending analysis of CAP mapping correction notifications to determine any potential trends in the submission of the type of map updates between October 2013 and the time of a Commission decision. PG&E shall file a report on the trending analysis within 90 days of a Commission decision.</p>

³⁹ 1/19/16 Tr. at 44:5-15 (SED/PWA) (“I don’t know a pipeline operator who has perfect maps and records.”).

⁴⁰ PG&E OB at A-1 to A-2 (listing records-related initiatives undertaken by PG&E).

⁴¹ Ex. 4 at 3-10:21 to 3-20:3 (PG&E Reply Testimony, Higgins).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p><i>(continued)</i></p>	<p>PG&E proposes the following alternative, specific remedies that continue to improve its gas distribution records:</p> <p><u>Comparing CC&B to GD GIS:</u> PG&E has already implemented measures to identify potential missing services. For example, as part of the process of validating its gas distribution asset data, PG&E compared its distribution asset maps in MET with the customer meter locations included in its Customer Care Billing System (CC&B) to identify assets not included on its maps.⁴² This effort was completed in 2013.⁴³ PWA recognized this as a best practice.⁴⁴</p> <p>PG&E is undertaking an additional effort to compare CC&B to GD GIS. A cross-check of these databases against each other verifies that customer premises have corresponding mapped services and mains within GD GIS.⁴⁵</p> <p><u>Trending Analysis:</u> PG&E agrees to conduct a trending analysis of CAP mapping correction notifications to determine any potential trends in the submission of the type of map updates between October 2013 and the time of a Commission decision. PG&E shall file a report on the trending analysis within 90 days of a Commission decision.</p>	

⁴² PG&E OB at 20, A-1; Ex. 4 at 2-20:21 to 2-21:3 (PG&E Reply Testimony, Singh); *id.* at 4-21:4-12 (PG&E Reply Testimony, Trevino).

⁴³ Ex. 4 at 4-21:11-12 (PG&E Reply Testimony, Trevino).

⁴⁴ Ex. 1 at 61 tbl.9 (PWA Report).

⁴⁵ Ex. 4 at 4-21:13-20 (PG&E Reply Testimony, Trevino).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>c. <u>GIS Validation Review:</u> PG&E should conduct a review of its GD GIS system to validate the data using all available records to ensure completeness and accuracy of data in GD GIS. Within 90 days of a final Commission decision in this matter, PG&E should file a report presenting documentation of all aspects of this review.</p>	<p>PG&E respectfully disagrees with this proposed remedy because it is overly broad, redundant to SED's Proposed Remedy (a), and is redundant of the extensive efforts the Company has already undertaken to digitize its distribution records.</p> <p>Among many other things, this remedy could be interpreted to require a manual comparison of tens of millions of distribution records to GD GIS data to confirm that the information is correct in GD GIS. It would take away focus from other critical work that is more effective at risk reduction. <i>See supra</i> PG&E Reply Brief pp. 51-52.</p> <p>Since 2012, PG&E has been transitioning to electronic-based records systems and has been digitizing its Gas Distribution paper records as part of the Pathfinder Project. PG&E began deploying GD GIS in some of its divisions by late 2013 and, by August 2015, PG&E finished implementing GD GIS in all of its 18 divisions.⁴⁶</p> <p>As part of this effort, PG&E embarked on a number of measures to validate the data imported into GD GIS, including: implementation of GD GIS in the Pathfinder Project; conducting PAR analysis to identify potential anomalies in the conversion to GD GIS; comparing GD GIS to CC&B and to Google Earth; using SAP to inventory assets and track mapping updates in GD GIS; comparing SAP leak data to GD GIS to identify potentially unmapped plastic inserts; and scanning and making paper gas service records and distribution as-built records accessible electronically.⁴⁷</p> <p>Additionally, PG&E is continuously looking for new ways to use analytic tools to analyze the data from its newly digitized data in GD GIS.⁴⁸</p> <p>PG&E provided extensive discovery and testimony on these efforts. Neither PWA nor SED has taken issue with any of these efforts. Nor has SED or PWA articulated any specific recommendations not already implemented by PG&E to validate its GD GIS records. In fact, PWA recognized many of these efforts as best practices.</p> <p>This proposed remedy is duplicative to PG&E's ongoing efforts and PG&E believes it therefore is unnecessary.</p>	<p>Duplicative of SED's Proposed Remedy (a) and is redundant of the Company's extensive ongoing efforts to digitize its distribution records.</p>

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>d. Plastic Inserts: PG&E should evaluate the need for a proactive program to identify unknown plastic inserts in its distribution system. Within 90 days of a final Commission decision in this matter, PG&E should file a report describing the evaluation for program need, and the basis for why a proactive program is or is not needed. PG&E should also describe any additional measures it is taking to address the risk of unknown plastic inserts.</p>	<p>PG&E agrees with this proposal.</p> <p>As provided throughout PG&E's testimony, PG&E has already implemented several initiatives to address unmapped plastic inserts.⁴⁹ For example, PG&E is comparing GD GIS to SAP leak data to identify potential unmapped plastic inserts, and uses CAP mapping correction notifications to detect evidence of potential unmapped stubs or inserts.⁵⁰ PG&E also has been actively investigating new advanced technologies for detecting such unmapped assets.⁵¹ See PG&E's Response to PWA's Recommendation 1 for a more detailed discussion of these backstop measures, <i>supra</i> p. C-1. These initiatives demonstrate that PG&E is taking a proactive approach to improve its maps and records. In addition, PG&E has agreed to conduct benchmarking analyses to identify industry best practices in addressing potential unmapped plastic inserts.⁵²</p> <p>PG&E further agrees to submit a report within 90 days of a final Commission decision in this proceeding.</p>	<p>None.</p>

⁴⁶ The amount of records involved in this project was massive, reaching nearly three times the height of the Empire State Building if the paper records were stacked vertically, and the effort required coordination among multiple departments and across all divisions of Gas Operations. Ex. 4 at 5-37:17-29 (PG&E Reply Testimony, Singh).

⁴⁷ PG&E OB at 18-20, A-1.

⁴⁸ *Id.* at 18-24; Ex. 4 at 4-16:18 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-25:14-26, 5-26:31 to 5-27:22 (PG&E Reply Testimony, Singh).

⁴⁹ Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 2-20:3-18 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-8:1 to 5-12:13 (PG&E Reply Testimony, Singh); *id.* at 6-15:26 to 6-16:8 (PG&E Reply Testimony, Thierry).

⁵⁰ PG&E OB at 18-26; Ex. 4 at 2-11:1-5, 2-20:3-13, 2-22:6-9 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-11:17 to 5-12:13 (PG&E Reply Testimony, Singh).

⁵¹ For example, PG&E initiated an industry R&D project with the Gas Technology Institute in collaboration with other gas distribution system operators to investigate commercially available technologies to detect potential inserted plastic pipe in gas distribution steel lines. This project tested several possible detection methods in the laboratory, but none have proven feasible in the field. PG&E has also been supporting the efforts of a start-up company that is developing ultrasonic means that may identify potential plastic inserts, demonstrating PG&E's continued commitment to identifying and developing new technologies that further build upon PG&E's current methods and procedures. PG&E OB at 56; Ex. 4 at 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh).

⁵² Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 6-15:26 to 6-16:8 (PG&E Reply Testimony, Thierry).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>e. Stub Identification: Within 90 days of a final Commission decision in this matter, PG&E should provide a report describing its policy of identification of stubs, and documenting a systemic effort to account for stubs.</p>	<p>PG&E agrees with this proposed remedy. <i>See also</i> PG&E's Response to PWA Recommendations #2, <i>supra</i>.</p>	<p>None.</p>
<p>f. Excavation Damage Prevention: PG&E should perform an analysis to determine causes of at-fault excavation damages of its distribution system. Within 90 days of a final Commission decision in this matter, PG&E should provide a report of its analysis, including measures to reduce the number of at-fault excavation damages caused by mapping and/or record inaccuracies in its gas distribution system.</p>	<p>PG&E currently performs such an analysis on a monthly basis. PG&E will use the most recent six-month data from the time of the Commission decision for this analysis and will identify any additional potentially required measures to reduce at-fault dig-ins. It will submit a report within 90 days.</p> <p>PG&E accurately marked 99.98% of the excavation requests it worked on between January and September 2015. At-fault dig-ins due to incorrect maps and records constitute a fraction of 0.02% of total dig-ins because the 0.02% figure includes dig-ins that resulted from factors other than imperfect maps or records, such as changed field conditions, or locate and mark operational errors unrelated to records.⁵³</p> <p>PG&E is committed to ongoing efforts to improve its gas distribution records and believes it could work with the CPUC directly to create objective measures of its progress in these ongoing efforts.</p> <p>PG&E is piloting a dedicated locating team for hard-to-locate facilities. This team integrates several functions (its members can locate, perform GPS surveys, and perform digs when necessary) and is provided with specialized training and an additional locating tool. The pilot includes pot-holing to validate locations, installation of radio frequency identification where appropriate, and map update requests.</p>	<p>(1) PG&E shall perform an analysis to determine causes of at-fault excavation damages of its distribution system and identify measures to reduce at-fault dig-ins and shall use the most recent six-month data from the time of the Commission decision for this analysis and submit a report within 90 days.</p> <p>(2) Based on the results of the dedicated locating team pilot, PG&E shall equip, at a minimum, two "difficult to locate" crews to perform location of facilities when traditional methods are unsuccessful.</p>

⁵³ PG&E OB at 13.

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>g. Distribution MAOP Identification: Within 90 days of a final Commission decision in this matter, PG&E should identify all of the facilities in its distribution system in which PG&E applied its alternative method of using post-1970 leak survey records to establish the MAOP. PG&E should provide a final list of these systems with the following data, at a minimum:</p> <ul style="list-style-type: none"> • Distribution line number, name, or nomenclature used by PG&E to identify the system • Location of the system – City and PG&E Division responsible for operations and maintenance • Operating Pressure • MAOP • Date installed • Date placed in service • Strength test information – date tested, test pressure, and duration • Material type • Size • Length • Copy of record/document used to establish the MAOP. 	<p>PG&E agrees to this proposed remedy and proposes alternatives with respect to date installed, date placed in service, and strength test information. Regarding date placed in service, PG&E may have difficulty establishing that date for some systems, so proposes instead to substitute date installed in those instances. With respect to strength test information, distribution facilities are not strength tested and thus that information is not available. However, they are leak (or pressure) tested, except for pipe installed prior to the establishment of state and federal code requirements. In those cases, leak test information was not recorded in the as-built documentation and may not be available. In addition, 49 C.F.R. § 192.517 requires an operator to retain leak test records for pipelines operating below 100 p.s.i. for only five years. PG&E agrees to provide any available leak test information, where applicable and available.</p>	<p>(1) Within 90 days of a final Commission decision in this matter, PG&E shall identify its facilities in its distribution system in which PG&E applied its alternative method of using post-1970 leak survey records to establish the MAOP. PG&E shall provide a final list of these systems with the following data:</p> <ul style="list-style-type: none"> • Distribution line number, name, or nomenclature used by PG&E to identify the system • Location of the system – City and PG&E Division responsible for operations and maintenance • Operating Pressure • MAOP • Material type • Size • Length • Copy of record/document used to establish the MAOP. <p>PG&E shall also provide the date placed in service. Where date placed in service information is not readily available, it will provide the date installed. PG&E shall also provide, where available, leak test information.</p> <p>(2) Based on the results of the record review in item (1), PG&E shall take additional steps to verify MAOP, as required, including pressure testing.</p>

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>h. <u>Distribution MAOP Risk</u> <u>Analysis:</u> PG&E should conduct a risk analysis and demonstrate its basis to conclude that the method it used for setting MAOP on the approximately 243 distribution systems do not create any additional safety risk. Along with the final list indicated above, within 90 days of a final Commission decision in this matter, PG&E should provide a report to the Commission describing the risk analysis performed, conclusions from that analysis, and any proposed remedial measures. SED reserves the right to review PG&E's report and submit a recommendation to the Commission.</p>	<p>PG&E agrees to this remedy. PG&E has completed the MAOP risk analysis suggested in SED's proposed remedy (h) and proposes to update that analysis once PG&E has completed the MAOP review identified in SED (g). PG&E agrees to provide a supplemental report, as necessary, for any additional distributions systems identified in SED's Proposed Remedy (g).</p>	<p>PG&E shall provide a supplemental report, as necessary, for any additional distributions systems identified in SED's Proposed Remedy (g).</p>

CARMEL'S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>1. Executive bonuses: Executive bonuses should be tied to include safety goals. The Commission should order that PG&E propose an ambitious model to more closely link executive pay to safety goals and measures. The order should include that SED and Carmel work together to hire an executive compensation advisor to review and make recommendations to PG&E's proposal. PG&E should pay for the compensation advisor.</p>	<p>This proposed remedy is outside the scope of this proceeding. The relationship between executive compensation and PG&E's recordkeeping practices and resulting gas distribution system safety was not an issue raised in this proceeding.</p> <p>Moreover, the relationship between executive compensation and meeting safety goals is currently being addressed in other regulatory proceedings, such as PG&E's 2017 General Rate Case application, and should not be determined here.⁵⁵</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>
<p>2. Safety and Leak Intervenor: The Commission should order the creation and the endowment of a safety and gas leak intervenor. This would be similar to the role of TURN, but an intervenor focused solely on issues of public safety relating to gas pipelines and gas leaks. Such an intervenor needs to be an independent voice, outside of the CPUC.</p>	<p>This proposed remedy is outside the scope of this proceeding and should be rejected. <i>See supra</i> PG&E Reply Brief, pp. 57-58.</p>	<p>Reject.</p>
<p>3. Safety and Leak Performance Incentives: The Commission should order that PG&E's authorized potential rate of return on capital be increased if PG&E's safety and leak record exceeds industry average. Conversely, PG&E's authorized potential rate of return on capital should be reduced if PG&E's safety and leak record is less than industry average. PG&E's safety record should include an analysis of its response time to gas leaks. This does not mean when PG&E gets there, it means when PG&E fixes the problem. In order to do this effectively, the Commission will need to set industry standards for measuring safety and require all gas utilities in the state to measure and report using these standards.</p>	<p>The relationship between monetary performance incentives and safety metrics is outside the scope of this proceeding, and is not supported by any evidence presented in this proceeding. Such a remedy would also constitute ratemaking.</p>	<p>Reject.</p>

⁵⁴ Carmel OB at 20-25.

⁵⁵ *See, e.g., Assigned Commissioner's Ruling and Scoping Memo, Application of Pac. Gas & Elec. Co. for Auth., Among Other Things, to Increase Rates and Charges for Elec. & Gas Serv. Effective on Jan. 1, 2017, A. 15-09-001, at 7-8 (Dec. 1, 2015).*

CARMEL’S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E’s Response	Proposed Ruling
<p>4. <u>Independent Review of PG&E’s Safety Culture</u>: The Commission should order an independent review to analyze PG&E’s business practices, policies, and corporate culture and how the utility prioritizes safety in its gas pipeline activities. PG&E’s safety protocols may look great on paper, but the law requires safe implementation. Carmel takes issue with the Exponent and “Lloyd’s of London” reports because they are purportedly “too cozy” with PG&E and their reports are too limited in scope or just scratch the surface of PG&E’s practices. They are commissioned and paid for by PG&E, creating an inherent conflict of interest. It is the implementation that gets overlooked in Lloyds and Exponent’s analyses. Carmel proposes that SED select the expert for an independent review to help keep them at arm’s length with its subject. PG&E should be ordered to pay for the review.</p>	<p>PG&E’s business practices, policies, and safety culture are currently being addressed in other regulatory proceedings, such as PG&E’s 2017 General Rate Case application, and should not be determined here.⁵⁶ Carmel’s assertion that Lloyd’s Register and Exponent are “too cozy” with PG&E is without basis. <i>See supra</i> PG&E Reply Brief, pp. 56-57.</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>
<p>5. <u>Finding that PG&E Caused the Release of Methane Gas</u>: The Commission’s decision should include a finding that PG&E caused methane, a greenhouse gas, to be released into the atmosphere as part of these six incidents and other leaks. Therefore, these are reportable events pursuant to the Global Warming Solutions Act of 2006. The Commission should confer with the California Air Resources Board about how to address such releases under the AB32 cap.</p>	<p>This proposed remedy is beyond the scope of this recordkeeping OII, and the broader issue is already being considered in the Commission’s Order Instituting Rulemaking to Adopt Rules and Procedures Governing Commission-Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage Consistent With Senate Bill 1371 (R. 15-01-008). It raises for the first time an issue for which Carmel has provided no notice or evidence from which to conclude that any incidents discussed in this OII were reportable under the Global Warming Solutions Act.</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>

⁵⁶ *See, e.g., id.*

CARMEL'S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>6. Order Additional Safety Remedies: The Commission should include in its decision the following binding commitments by PG&E with respect to improving safety in its communities:</p> <ul style="list-style-type: none"> • PG&E to immediately call 911 and otherwise engage first responders for any future, similar gas leaks like the one seen in Carmel; • PG&E to have necessary safety equipment on trucks doing work for any reasonably foreseeable accidents that could be caused by such work; and • PG&E to have relevant safety equipment on first responder trucks to remedy all but the most serious incidents. 	<p>Emergency response is beyond the scope of this proceeding and PG&E was not given notice of this issue so that evidence demonstrating PG&E's emergency response performance could be presented. PG&E paid a \$10.85 million fine in response to a citation alleging two violations related to the Carmel incident, for failing to equip its personnel with the tools necessary to stop the flow of gas and for failing to make the surrounding area safe despite signs of a possible leak.⁵⁷</p> <p>In any event, PG&E is already addressing emergency response concerns by developing enhanced work and emergency response procedures, including equipping all crews in the City of Carmel with emergency tools, providing first responder training, and piloting a new protocol for PG&E crews to work more closely with local first responders.⁵⁸</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>

⁵⁷ Resolution ALJ-323, *Resolves the Appeal of Pac. Gas & Elec. Co. from Citation ALJ-274 2014-11-001 Issued by the Safety & Enforcement Div.*, 2015 Cal. PUC LEXIS 757, at *1-2.

⁵⁸ See Letter from Kevin Knapp, PG&E Vice President of Transmission and Distribution Operations, to Elizaveta Malashenko, Deputy Director of SED at 2-3 (Sept, 8, 2014), available at <http://ci.carmel.ca.us/carmel/index.cfm/linkservid/F1FD02AB-3048-7B3D-C5189A2F6920D9BF>.

CARMEL’S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E’s Response	Proposed Ruling
<p>7. <u>Compensation to Carmel:</u> PG&E should be ordered to pay Carmel for its damages associated with the March 3, 2014 blast. Carmel suffered direct costs through its emergency response efforts, its remediation and repair costs, its administrative time and effort, and its consulting and legal costs. It has also suffered indirect costs through lost “opportunity costs.” The explosion also caused indirect costs by damaging Carmel’s “brand” as a quiet, tranquil coastal town; a house explosion is not attractive to investment and tourism. The community of Carmel has been damaged as a result of the explosion. The explosion caused neighbors anxiety and they suffered loss of sleep due to the fear of what other unknowns exist underground.</p>	<p>In the context of an OII, the California Public Utilities Code authorizes the Commission to order penalties, fines and restitution as well as equitable remedies, but not to order damages.⁵⁹ Indeed, Carmel has identified no precedent for the Commission to order direct compensation to a private party or municipality in an OII, and PG&E is aware of none.⁶⁰</p> <p>Carmel states that it will submit evidence of damages through a “separate, further briefing” at some unknown time, outside of the briefing schedule and testimony set in this proceeding.⁶¹</p> <p>Carmel’s request should be rejected.</p>	<p>Reject.</p>
<p>8. <u>Fines and Penalties Should Be Paid with Shareholder Money:</u> PG&E shareholders should pay these penalties rather than ratepayers.</p>	<p><i>See supra</i> PG&E Reply Brief, pp. 53-55.</p>	

⁵⁹ Compare Cal. Pub. Util. Code § 2106 (stating that “[a]n action to recover for . . . loss, damage, or injury [caused by a public utility] may be brought in any court of competent jurisdiction”) with Cal. Pub. Util. Code § 2107 (granting the Commission the power to impose a penalty on any public utility that fails to comply with a state law or Commission order) and D. 15-04-024, 2015 Cal. PUC LEXIS 230, at *45-46 (finding that although the Commission is empowered to impose remedies outside of those available under section 2107, such additional remedies are limited to those equitable in nature); see also *Order Instituting Rulemaking on Regulations Relating to Passenger Carriers, Ridesharing, and New Online-Enabled Transp. Servs.*, D. 16-01-014, 2016 Cal. PUC LEXIS 22, at *90 (stating that “[t]he Commission has broad authority to impose *finer and penalties* on persons subject to the Commission’s jurisdiction”) (emphasis added).

⁶⁰ Carmel incorrectly argues that because the Commission has “exclusive jurisdiction” over the safety of PG&E’s distribution system, this proceeding is the “proper venue” for Carmel’s damages claims. Carmel OB at 24. Although “the Legislature has granted *regulatory* power to the PUC over the safety of gas pipelines,” *S. Cal. Gas Co. v. City of Vernon*, 41 Cal. App. 4th 209, 217 (1995) (emphasis added), the Commission is empowered to seek “penalties due the State” for violations of law, Cal. Pub. Util. Code § 2101, which are generally paid to the State’s General Fund. See Cal. Pub. Util. Code § 2104.5.

⁶¹ Carmel OB at 24.

TURN'S PROPOSED REMEDIES⁶²

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>1. <u>Transmission Recordkeeping OII Remedies (Transmission OII Remedies)</u>: The Commission should extend to gas distribution recordkeeping each of the 21 transmission recordkeeping remedies adopted by the Commission in D. 15-04-024 (see below).⁶³</p>	<p>As discussed in details below, many of the Transmission OII Remedies have been implemented for gas distribution in the course of implementing for Gas Transmission, and many of those are complete. Many relate to the details of implementing a Records and Information Management program which is not an issue in the evidentiary record of this proceeding.⁶⁴ Some of the remedies are clearly inapplicable to the gas distribution assets, such as those addressing salvaged pipe, which is not used in the gas distribution system. While a few of the remaining remedies relate exclusively to transmission, PG&E has adopted similar principles in its ongoing work to enhance gas distribution systems, processes, and procedures.</p> <p><i>See Adopted Transmission Recordkeeping OII Remedies, infra pp. C-21 to C-36.</i></p>	<p>Unnecessary.</p>
<p>2. <u>Plastic Inserts</u>: The Commission should order PG&E to undertake proactive and systematic efforts to identify and correct in its maps and records all unmapped or inaccurately mapped records of plastic inserts in its distribution system and order this work to be completed within three years.</p>	<p>PG&E is agreeing to SED's Proposed Remedy (d) to evaluate the need for a proactive program to identify unknown plastic inserts in its distribution system. TURN's proposed remedy is duplicative and unnecessary. <i>See PG&E's Response to SED's Proposed Remedy (d), supra p. C-11.</i></p>	<p>Duplicative of SED's Proposed Remedy (d).</p>
<p>3. <u>Stubs</u>: The Commission should order PG&E to undertake proactive and systematic efforts to identify and correct its maps and records of all unmapped or inaccurately mapped stubs in its distribution system and order this work to be completed within three years.</p>	<p>PG&E is agreeing to SED's Proposed Remedy (e) to document a systemic effort to account for stubs. TURN's proposed remedy is duplicative and unnecessary. <i>See PG&E's Response to SED's Proposed Remedy (e), supra p. C-12.</i></p>	<p>Duplicative of SED's Proposed Remedy (e).</p>

⁶² TURN OB at App. A.

⁶³ *See Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. to Determine Violations of Pub. Util. Code Section 451, Gen. Order 112, & Other Applicable Standards, Laws, Rules & Regulations in Connection with the San Bruno Explosion & Fire on Sept. 9, 2010*, D. 15-04-024, 2015 Cal. PUC LEXIS 230 (Transmission Recordkeeping OII), at *417-42.

⁶⁴ *Id.* at *430-37, (Remedies 1, 3, 4, 5, 7, 8, 9, 10, 11, 15, 17).

TURN'S PROPOSED REMEDIES⁶²

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
4. MAOP: The Commission should order PG&E to take the necessary steps to establish MAOP in compliance with applicable law and, within 90 days, to submit a compliance plan for Commission approval, via a Tier 3 advice letter.	PG&E is agreeing to SED's Proposed Remedy (g) and (h) to address MAOP issues. <i>See</i> PG&E's Response to SED Proposed Remedies (g) and (h), <i>supra</i> p. C-13 to C-14. TURN's proposal is duplicative and TURN has provided no evidence in the record to support this alternative proposal.	Duplicative of SED's Proposed Remedies (g) and (h).
5. Remedies to Be Paid By Shareholders: The Commission should order that costs incurred by PG&E related to any remedies ordered in the proceeding be paid by PG&E's shareholders and not be recovered from ratepayers.	<i>See supra</i> PG&E Reply Brief pp. 53-55. ⁶⁵	

⁶⁵ *See also* Ex. 4 at 1-25:15 to 1-26:2 (PG&E Reply Testimony, Howe).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>1. <u>Level 3 Information Maturity Score:</u> PG&E's gas transmission organization shall achieve at least a Level 3 information maturity score under the Generally Accepted Records Keeping Principles within three years.</p>	<p>PG&E's Gas Operations organization has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.⁶⁸ As part of its efforts to achieve ARMA Level 3 maturity, in August 2015 PG&E began the electronic records portion of a multi-year records management initiative, with a focus on information controls and security.⁶⁹ The initiative is scheduled to be completed in 2018.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings.⁷⁰</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁶⁶ See D. 15-04-024, 2015 Cal. PUC LEXIS 230, at *417-42. For a report on the status of the implementation of these remedies, see Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>.

⁶⁷ This column provides the status of the implementation of the remedy, to the extent that PG&E undertook activities consistent with the intent of the remedy or as such a remedy was applied to the gas distribution systems in the Transmission Recordkeeping OII. "In Progress" indicates that the remedy is being implemented or is ongoing as part of the Transmission Recordkeeping OII. "Completed" indicates that the remedy has been implemented as to distribution activities through the Transmission Recordkeeping OII or that PG&E has implemented measures to address the intent of the remedy as part of its ongoing efforts to improve its distribution records and distribution system safety.

⁶⁸ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

⁶⁹ Ex. 5, Attachment W014 at W014.003 (PG&E's Response to SED Data Request No. 114).

⁷⁰ PG&E requested permission to remove forecast costs from PG&E's 2015 Gas Transmission and Storage (GT&S) Rate Case (*Application of Pac. Gas & Elec. Co. Proposing Cost of Serv. & Rates for Gas Transmission & Storage Services for the Period 2015-2017*, A. 13-12-012) to implement remedies associated with the Transmission Recordkeeping OII (*Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016). See 2015 GT&S Rate Case Hearing Ex. 137 (Supplemental Testimony with Errata – Remedies, Chapter 24: Impact of Remedies on GT&S Forecast), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=346551>; 2015 GT&S Rate Case Hearing Ex. 138 (Workpapers Errata (Clean) Supporting Chapter 24), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=346552>. PG&E's supplemental testimony in the 2017 General Rate Case (GRC) (*Application of Pac. Gas & Elec. Co. for Auth., Among Other Things, to Increase Rates & Charges for Elec. & Gas Service Effective on Jan. 1, 2017*, A. 15-09-001) discusses the forecast costs to implement the remedies that are included in PG&E's gas distribution revenues. See 2017 GRC Exhibit PG&E-14 (Impact of Gas Transmission Remedies on GRC Forecast and Update to Enterprise Records and Information Management Program), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=352511>; 2017 GRC Exhibit PG&E-14 (Workpapers Supporting Chapter 2: Impact of Gas Transmission Remedies on GRC Forecast), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=352489>.

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
2. Rejected by the Commission	N/A	N/A	N/A
<p>3. <u>Corporate Policy and Standard on Recordkeeping</u>: PG&E shall issue a corporate policy and standard that will:</p> <p>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.</p> <p>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.</p> <p>c. The retention schedule will support the policy by providing retention length for all identified official records to meet legal and regulatory mandates.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁷¹ and thus are not an issue in this proceeding, PG&E is already meeting this proposed remedy through its RIM program, and has provided SED with its current and updated RIM and record retention policies.⁷²</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.</p> <p>PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

PG&E committed to removing the costs described in the 2017 GRC supplemental testimony from the forecast once the Commission issues its decision in the 2015 GT&S Rate Case, as the adjustment is dependent on a Commission decision in the GT&S rate case regarding the recommendation by TURN that all costs to implement the remedies should be taken out of gas transmission revenues only.

⁷¹ Ex. 1 at 1:22-23 (PWA Report).

⁷² *Id.* at 84 atch. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2); Ex. 4 at 2-5:18 to 2-6:2; *see, e.g.*, Ex. 5, Attachment W010 (Utility Standard TD-4016S, Rev. 1, Gas Operations Records and Information Management); *id.*, Attachment W011 (Utility Standard TD-4017S, Rev. 0, Gas Operations Vital Records Management).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>4. <u>Education and Training Program:</u> 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:</p> <p>a. All staff shall be receive [sic] 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.</p> <p>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.</p> <p>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.</p>	<p>In 2014, 98% of the Gas Operations workforce (consisting of about 5,000 employees) received RIM training, which included information about defining a record and a vital record, provided examples of the difference between a record and a non-record, and described electronic and paper records. In 2015, Gas Operations transitioned to an enterprise-deployed Information Governance training, which is an annual requirement for all employees. As of October 2015, 82% of Gas Operations employees had completed that training, and with the exception of 4% of the employees who were new to the gas organization, 96% of employees were trained by the year end. Consistent with the suggestion made in the PWA Report, Gas Operations plans to develop and implement a monitoring plan to evaluate the effectiveness of records-related trainings that are provided to employees.⁷³</p> <p>Further, to raise awareness about the RIM program and reinforce its importance to PG&E's work, each local headquarters office includes a RIM information board that identifies the local RIM coordinator, the link to the program's website, and information about the program. The Gas RIM team provides targeted training to the Gas RIM Coordinators and supports them as they coach field office employees in meeting their recordkeeping responsibilities and implementing the associated records requirements.⁷⁴</p>	<p><i>Completed.</i> PG&E has implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.</p> <p>PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁷³ Ex. 4 at 2-6:16 to 2-7:2 (PG&E Reply Testimony, Singh).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>5. <u>Records Management Systems:</u> 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.</p>	<p>PG&E has already implemented a number of technologies that meet the intent of this proposed remedy. These platforms enable PG&E to implement best practices for standardizing recordkeeping practices and improving its asset data.</p> <p>These platforms include GD GIS, which provides spatial information about distribution assets and attributes of assets (<i>e.g.</i>, size, type, and location), along with references to work orders and gas service record numbers.⁷⁵ PWA called PG&E's GD GIS system an "innovative practice."⁷⁶</p> <p>SAP includes an asset management database that contains equipment records, maintenance history and plans, gas leak data, preventive and corrective notifications, scheduling and cost collecting orders, material requisitions, warehouse management, financials, and cost accounting, as well as an inventory of data and maintenance plans related to regulation, valves, corrosion, leak survey, and instrument calibration for the gas distribution system. SAP also provides enhanced process control measures for monitoring the time to complete mapping after construction has been completed.⁷⁷ PWA praised the expanded use of SAP as a "positive technology addition."⁷⁸</p>	<p><i>Completed.</i> PG&E has already made significant progress in implementing these systems for distribution that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

⁷⁴ *Id.* at 2-7:20-27 (PG&E Reply Testimony, Singh).

⁷⁵ *Id.* at 2-11:25-29 (PG&E Reply Testimony, Singh).

⁷⁶ Ex. 1 at 59 (PWA Report).

⁷⁷ Ex. 4 at 2-14:9-24 (PG&E Reply Testimony, Singh); *id.* at 4-11:28 to 4-14:16 (PG&E Reply Testimony, Trevino).

⁷⁸ Ex. 1 at 56:3-5 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<i>(continued)</i>	<p>Documentum serves as PG&E's primary electronic records depository, and stores both record content and record metadata (<i>e.g.</i>, record creation date, author, editor, versions, format, and lifecycle status), with full-text search capabilities.⁷⁹</p> <p>The three systems interface with each other to provide information necessary to manage assets in real-time for prompt decision making, and can provide advanced analytic capabilities to improve the accuracy of asset data.⁸⁰ For example, PG&E can identify and correct GD GIS records by comparing leak repair information in SAP with its gas distribution maps.⁸¹</p>		
<p>6. Senior Management Accountability: 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.</p>	<p>This proposed remedy does not relate to recordkeeping and is therefore outside the scope of this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding with the implementation of the Gas Operations Records and Information management structure and governance. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁷⁹ Ex. 4 at 2-14:30 to 2-15:23 (PG&E Reply Testimony, Singh).

⁸⁰ *Id.* at 2-15:31 to 2-16:17, 2-18:11-14 (PG&E Reply Testimony, Singh).

⁸¹ *Id.* at 2-20:4-6 (PG&E Reply Testimony, Singh).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>7. <u>Employees for RIM:</u> PG&E shall identify and document the employees responsible for implementing the Records and Information Management program for gas transmission.</p>	<p>As of the third quarter of 2014, Gas RIM had eight full-time employees dedicated to the implementation and oversight of gas records management, with plans to add additional resources starting in 2016. Gas Operations has also established a Gas RIM Coordinator Network consisting of approximately 120 employees across its 152 field offices. RIM Coordinator responsibilities include functioning as subject matter experts for assigned locations, providing guidance and support to their offices, and work groups on management, protection, and control of records.⁸²</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>8. <u>Consistent Standard Practices:</u> PG&E shall develop consistent standard practices that include gas transmission records management linked to corporate policies on information governance.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁸³ and thus are not at issue in this proceeding, PG&E sent copies of its updated RIM policies, standards and procedures to SED during discovery and their quality, completeness and usefulness was not raised by SED as an issue in this proceeding.⁸⁴</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁸² *Id.* at 2-7:8-20 (PG&E Reply Testimony, Singh).

⁸³ Ex. 1 at 1:22-23 (PWA Report).

⁸⁴ *Id.* at 84 attch. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>9. <u>Retention Periods</u>: PG&E shall implement mandated retention periods for all records relevant to gas transmission.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁸⁵ and thus are not at issue in this proceeding, PG&E has provided SED with its current and updated record retention policies.⁸⁶ See PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 8, <i>supra</i> p. C-26.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>10. <u>Standards to Conform with RIM Policies</u>: PG&E shall ensure that each gas transmission standard conforms with Records and Information Management (RIM) policies for gas transmission.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures⁸⁷ and are therefore not at issue in this proceeding. Regardless, PG&E is already meeting this proposed remedy with regard to gas distribution through its development and implementation of its RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁸⁵ *Id.* at 1:22-23 (PWA Report).

⁸⁶ *Id.* at 84 atch. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2).

⁸⁷ *Id.* at 1:22-23 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>11. <u>Treatment of Active and Inactive Records</u>: PG&E shall include the treatment of active and inactive records in its Records and Information Management (RIM) Policy for gas transmission.</p>	<p>PG&E is already meeting this proposed remedy with regard to gas distribution through its development and implementation of its RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>12. <u>Traceable, Verifiable, and Complete Standard</u>: 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."</p>	<p>PG&E implemented a process for distribution activities that addresses the goal intended by this remedy. The traceable, verifiable, and complete records standard is defined to include gas distribution records contained in PG&E's job files. PG&E's standard, Gas As-Built Packages, TD 4461S, defines job file, which includes the information necessary to validate MAOP. Moreover, PG&E's record retention schedule includes retention periods for the records contained in job files. The intent of this remedy has already been implemented by PG&E.</p>	<p><i>Completed.</i> PG&E has already implemented a process for distribution activities that addresses the goal intended by the remedy.</p>	<p>Unnecessary.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>13. Accuracy of Records: 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.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. PG&E has two processes to update as-builts or make changes to the records in the gas distribution GD GIS system to ensure accuracy and completeness.</p> <p>The first is in creating the as-built. As PG&E testified, it has implemented a number of process improvements to the process of creating and documenting as-builts.⁸⁸</p> <p>The second process is in Mapping corrections. As PG&E testified, PG&E upgraded and documented a new Map Correction procedure TD-4460P-11 "Gas Map Corrections," effective October 17, 2014.⁸⁹ This new process allows any PG&E employee to submit map corrections directly to mapping through CAP via a mobile application, web page, or directly into SAP. These are then tracked, completed by mapping, and closed. The record from the field (<i>e.g.</i>, correction form or drawing) is stored within SAP under the CAP notification number.</p>	<p><i>Completed.</i> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

⁸⁸ Ex. 4 at 4-9:3-14 (PG&E Reply Testimony, Trevino); *id.* at 5-12:20 to 5-13:9 (PG&E Reply Testimony, Singh); *see* Ex. 5, Attachment W017 (TD-4461P-20-F01, Checklist for Distribution Mains and Services As-Built Packages); Ex. 7, Attachment W080 (TD-4461M, Rev. 0, As-Built Drawing Handbook).

⁸⁹ Ex. 4 at 4-5:22 to 4-6:15 (PG&E Reply Testimony, Trevino); *id.* at 5-22:22-28, 5-25:14-26 (PG&E Reply Testimony, Singh); *see* Ex. 6, Attachment W029 (Utility Procedure TD-4460P-11, Rev. 0, Gas Map Corrections).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>14. Standard Format for Job Files: 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.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. <i>See supra</i> PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 12.</p> <p>PG&E is agreeing to SED's Proposed Remedies (g) and (h) to address MAOP issues. <i>See</i> PG&E's Response to SED's Proposed Remedies (g) and (h), <i>supra</i> pp. C-13 to C-14.</p> <p>Finally, distribution job files, which do not require all of the same documentation (such as x-ray reports and weld maps), are currently accessed through SAP.</p>	<p><i>Completed.</i> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy. <i>See also</i> PG&E's Response to SED's Proposed Remedies (g) and (h), <i>supra</i> pp. C-13 to C-14.</p>	<p>Unnecessary.</p>
<p>15. Job File Data To Be Immediately Accessible: 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.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. <i>See supra</i> PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 12, <i>supra</i> p. C-28.</p> <p>Distribution job file information is accessed electronically through SAP.</p>	<p><i>Completed.</i> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>16. Missing Records: 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:</p> <ul style="list-style-type: none"> 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. <p>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.</p>	<p>PG&E's responses to SED's Proposed Remedies (a)–(e) address the recordkeeping issues raised in this proceeding. Moreover, PG&E's gas plat sheets are now updated in GD GIS and distribution job files are maintained in SAP. <i>See</i> PG&E's Responses to SED's Proposed Remedies (a) and (c), <i>supra</i> pp. C-5 to C-7, C-10, and PG&E's Responses to Adopted Transmission Recordkeeping OII Remedies (5), (14), and (15), <i>supra</i> pp. C-24 to C-25, C-30. Thus, this remedy is duplicative to those proposed remedies.</p>	<p><i>In Progress.</i> <i>See</i> PG&E's responses to SED's Proposed Remedies (a)–(e), <i>supra</i> pp. C-5 to C-12.</p>	<p>Inapplicable to distribution assets and duplicative of PG&E's Responses to SED's Proposed Remedies (a)–(e).</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>17. <u>Document Changes to Policies, Standards, and Procedures:</u> 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 and 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.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁹⁰ and thus are not at issue in this proceeding, PG&E already currently tracks and maintains changes to policies and procedures.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁹⁰ Ex. 1 at 1:22-23 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>18. <u>Identification of Salvaged and Reused Pipes</u>: 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.</p>	<p>PG&E does not use salvaged pipe in its Gas Distribution system. This proposed remedy is therefore inapplicable to this proceeding.</p>	<p><i>N/A</i></p>	<p>Inapplicable to gas distribution.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>19. Rejected. TURN proposed remedy 1 adopted instead: <u>TURN Proposed Remedy 1 – Centralized Database to Track Re-Used Pipes:</u> PG&E shall create a centralized database to track where it has placed reused 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 reused 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.</p>	<p>PG&E does not use salvaged pipe in its Gas Distribution system, and therefore, this proposed remedy is inapplicable to this proceeding.</p>	<p align="center"><i>N/A</i></p>	<p>Inapplicable to gas distribution.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>20. <u>PwC Recommendations:</u> PG&E shall implement the recommendations included in the final PricewaterhouseCoopers (PwC) audit report. (TURN Exhibit 16, Appendix B).</p>	<p>The PwC report is dated March 31, 2012, and many of its recommendations have been implemented as ordered in the Gas Transmission Records OII. Ordering these recommendations again is duplicative. Others, while still implemented, are not germane to the disputed issues in this case. Two of the recommendations, C.1 and C.2, relate to ongoing RIM training and are appropriate in this context, but duplicative because already ordered and in progress as a result of the Transmission Recordkeeping OII proceeding. The PwC recommendations, therefore, are duplicative, unnecessary, or not relevant to issues in this proceeding.</p> <p><i>See</i> PG&E's Responses to PwC Recommendations, <i>infra</i> pp. C-37 to C-63.</p>	<p><i>See</i> PwC Recommendations, <i>infra</i> pp. C-37 to C-63.</p>	<p><i>See</i> PwC Recommendations, <i>infra</i> pp. C-37 to C-63.</p>
<p>21. <u>Audit of Recordkeeping Practices:</u> 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 10 years after the final decision is issued in OII. 11-02-016.</p>	<p>PG&E currently works with SED through SED's division audit process to identify and correct gas distribution deficiencies including those associated with records, and will continue to do so as the Commission directs.</p> <p>Additionally, PG&E uses a robust system of internal auditing, which is directly overseen by senior management, and which includes audits of recordkeeping practices.⁹¹</p> <p>PG&E has also made extensive use of independent auditors and experts, such as Lloyd's Register.⁹² PWA has commended PG&E's use of both internal and external audits.⁹³</p> <p>There has been no evidence presented in this proceeding that suggests a separate, independent auditor is necessary.</p>	<p><i>N/A</i></p>	<p>Unnecessary.</p>

⁹¹ Ex. 4 at 3-23:3-20 (PG&E Reply Testimony, Higgins).

⁹² *Id.* at 1-22:1-32 (PG&E Reply Testimony, Howe); *id.* at 2-8:13-16 (PG&E Reply Testimony, Singh).

⁹³ Ex. 1 at 69:3-4, 75:1-6 (PWA Report).

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Proposed Remedial Measure	PG&E's Response	Status⁶⁷	Proposed Ruling
<p>22. <u>Correct Deficiencies Identified From Audits:</u> 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.</p>	<p>See PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 21, <i>supra</i> p. C-35.</p>	<p><u>N/A</u></p>	<p>Unnecessary.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>A.1. RIM Program: Seek commitment to be a gas utility with a leading RIM program by highlighting benefits and declaring the objectives with tangible milestones such as industry awards and presenting at industry conferences on RIM initiatives.</p>	<p>PG&E's Gas Operations organization has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.⁹⁶ As part of its efforts to achieve ARMA Level 3 maturity, in August 2015 PG&E began the electronic records portion of a multi-year records management initiative, with a focus on information controls and security.⁹⁷ The initiative is scheduled to be completed in 2018.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. Thus, this remedy is duplicative. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>A.2. RIM Program: Strive to be a gas utility with a top RIM program by leveraging leading practices from within gas and other industries.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i>.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i>.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁹⁴ For a report on the status of the implementation of these remedies, see Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>.

⁹⁵ This column provides the status of the implementation of the remedy, to the extent that PG&E undertook activities consistent with the intent of the remedy or as such a remedy was applied to the gas distribution systems in the GT Records OII. "In Progress" indicates that the remedy is being implemented or is ongoing as part of the GT Records OII. "Completed" indicates that the remedy has been implemented as to distribution activities through the Transmission Recordkeeping OII or that PG&E has implemented measures to address the intent of the remedy as part of its ongoing efforts to improve its distribution records and distribution system safety.

⁹⁶ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

⁹⁷ Ex. 5, Attachment W014 at W014.003 (PG&E's Response to SED Data Request No. 114).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>A.3. RIM Program: Leverage the RIM Principles and the attributes of RIM Maturity to devise a Gas RIM strategy that seeks to move the Gas organization to a higher maturity level.</p>	<p><i>See supra</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i> p. C-37.</p>	<p><i>See supra</i> Response to PwC Recommendation A.1, <i>supra</i> p. C-37.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>B.1. Corporate Records Management: Align with Corporate Records Management Policy and Retention Schedule; at a minimum including Legal (with possible Outside Counsel review) Corporate Secretary, and Corporate Information Governance Council.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁹⁸ and thus are not an issue in this proceeding, PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.2. Gas Governance Structure: Create Gas Governance Structure, including Gas Information Governance Council, Gas Steering Committee, Gas RIM Director Role, Regional/Business Unit Managers, and Coordinators</p>	<p>The gas governance structure is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁹⁸ Ex. 1 at 1:22-23 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>B.3. RIM Project Plan: Gas RIM Director/Council should create and own the RIM Project Plan/PMO and track progress, challenges, milestones reached, and evaluate necessary changes to plan and timelines, etc.</p>	<p>The role of the RIM director is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.4. Gas Compliance Organization: Consider creating a formal Gas Compliance organization leveraging the existing “Standards and Policies” function.</p>	<p>Creation of a Gas Compliance organization is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.5. Retention Schedules: Consolidate and update Retention Schedules. Retention schedule to apply to all content regardless of storage medium (<i>e.g.</i>, database, paper files, image system, microfiche, backup tape, etc.)</p>	<p>Retention schedules are not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>B.6. <u>Corporate Records Management Policy</u>: Update/Enhance Corporate Records Management Policy.</p>	<p>The Corporate Records Management Policy is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.7. <u>Corporate Records Management Policy and Retention Schedule</u>: Embed the Corporate Records Management Policy and the Retention Schedule within each Gas function.</p>	<p>The Corporate Records Management Policy and the Retention Schedule are not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.1. RIM Training: Provide RIM training to all Gas Operations employees.</p>	<p>In 2014, 98% of the Gas Operations workforce (consisting of about 5,000 employees) received RIM training, which included information about defining a record and a vital record, providing examples of the difference between a record and a non-record, and describing electronic and paper records. In 2015, Gas Operations transitioned to an enterprise-deployed Information Governance training, which is an annual requirement for all employees. As of October 2015, 82% of Gas Operations employees had completed that training, and with the exception of 4% of employees who were new to the gas organization, 96% of the remaining Gas Operations employees were trained by the end of the year. Consistent with the suggestion made in the PWA Report, Gas Operations already has plans in place to develop and implement a monitoring plan to evaluate the effectiveness of records-related trainings that are provided to employees.⁹⁹</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.2. Gas Operations Training: Create a holistic Gas Operations learning curriculum that provides timely, job-specific, technical, and soft-skills training, and includes RIM concepts and principles.</p>	<p>RIM concepts and principles were incorporated into Gas Operations courses as part of the Gas Operations curriculum training development strategy.¹⁰⁰</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁹⁹ Ex. 4 at 2-6:16 to 2-7:2 (PG&E Reply Testimony, Singh).

¹⁰⁰ Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016, at 89 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>C.3. <u>Additional Training</u>: After initial RIM training courses are conducted, identify functions and/or individuals that require additional Change Management and training assistance.</p>	<p>Change Management training is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.4. <u>Gas RIM Program Communication Plan</u>: Develop and execute a Gas RIM Program Communications plan to enhance and sustain executive support for the RIM initiative, and educate all employees on the importance of an effective RIM program.</p>	<p>The Gas RIM Program Communication plan is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.5. <u>“A Day in the Field” Visits</u>: Promote cross-level camaraderie and knowledge sharing by having leadership conduct “a day in the field” visits at least once a year, and observe the work, including the RIM-related practices.</p>	<p>The need for cross-level camaraderie is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>C.6. <u>Additional Resources</u>: Identify additional resources (internal or external) with appropriate skill sets and experience to work at direction of identified PG&E resources with Quality Control and Vendor Management expertise. Leverage resources execute on planned temporary or interim activities to resolve any backlog of work (filing, mapping, other functions as deemed appropriate), and to help prep and organize records at locations in advance of larger digitization efforts.</p>	<p>PG&E is already addressing this remedy through its implementation of the RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.7. <u>Cross-Functional Teamwork</u>: Promote Cross-Functional Teamwork to improve processes, including data accuracy and quality.</p>	<p>The need for cross-functional teamwork is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.8. <u>Employee Feedback and Incentives</u>: Solicit, evaluate and respond to feedback from employees. Provide incentives to employees for generating cost savings and other innovative ideas, without compromising quality.</p>	<p>The need for employee feedback and incentives is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.9. <u>Gas Employee of the Month</u>: Consider creating a “Gas Employee of the Month” program to highlight employees who have demonstrated positive impact to RIM culture.</p>	<p>The need to highlight employee impact on RIM culture is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.10. <u>Gas Records Management Day</u>: Consider creating a “Gas Records Management Day” to promote and get employees involved in various RIM activities. Leverage as an employee morale event/teaming event/training.</p>	<p>Employee engagement in RIM activities is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>C.11. Consolidating Gas Distribution Mappers: Consider consolidating Gas Distribution Mappers to centralized location to facilitate consistency and controls. Retain 1-2 local field resources for local requests and M&C assistance.</p>	<p>PG&E provided testimony in this proceeding on the structure of its Mapping organization, which has been significantly consolidated.¹⁰¹ None of the parties raised any issues on the remaining distributed mapping workforce. No evidence was presented to suggest that the current practice is not operating well or that a change at this time would “facilitate consistency and controls.”</p>	<p><i>Completed.</i></p>	<p>Duplicative of actions PG&E has taken regarding its gas distribution mapping function.</p>
<p>C.12. Success Criteria and Metrics: Develop appropriate success criteria, and appropriate metrics with quality aspect. Leverage the metrics in a positive light to promote progress and achievements. Recognize employee contributions to support the organization's goals as it relates to RIM principles and initiatives.</p>	<p>Employee recognition is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.1. Standard on Metrics: Create a Standard that indicates that all reporting metrics must include a Quality component, or a footnote as to the method in which the quality of the metrics was supported/confirmed.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹⁰² and thus are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰¹ Ex. 4 at 4-3:1 to 4-4:18 (PG&E Reply Testimony, Trevino).

¹⁰² Ex. 1 at 1:22-23 (PWA Report).

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D.2. <u>RIM Issues Reporting:</u> Create a requirement and protocol for reporting any potential systemic data quality or RIM issues to immediate Supervisor and Gas RIM Director.</p>	<p>PG&E's procedures go beyond this recommendation. PG&E's CAP program is used to identify, track, and resolve recordkeeping and other issues. Any PG&E employee can report any issue in CAP and the issue is assigned to the appropriate personnel. This ensures that the issues are assigned to the appropriate, responsible personnel, who may or may not be the RIM supervisor or director. None of the parties raised any issues about RIM reporting.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.3. <u>Employee Departure/Transfer Process/Procedure:</u> Review and update the process/procedure for Employee Departure/Transfer to ensure transition of Gas Records from employee custody or on hard drives/servers to corporate storage and management.</p>	<p>Employee departure and ensuing transfer of records is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.4. <u>Disposition Procedure:</u> Create a formal Disposition Procedure to address records eligible for disposition, including preservation obligations, approval for disposition, and appropriate disposition techniques.</p>	<p>Records disposition is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D.5. <u>Integrate RIM Controls:</u> Integrate RIM controls within Gas Operations business processes.</p>	<p>RIM controls were not raised as an issue in the evidentiary record of this proceeding. However, PG&E has made significant investment in its RIM program, as described in testimony.¹⁰³</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰³ Ex. 4 at 2-7:4 to 2-8:25 (PG&E Reply Testimony, Singh).

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.6. Guidelines for Storage of Physical Records: Create formal guidelines for the storage of physical records, including temperature/moisture conditions, and consideration of fire-safe location for vital physical records.</p>	<p>PG&E has already published two standards that address this proposed remedy.</p> <p>First, PG&E recently published Gas Operations Records Information Management standard (TD-4016S),¹⁰⁴ which defines what a “record” is and sets forth general rules for the retention, storage, and disposal of both paper and electronic records. Moreover, the Enterprise Records and Information Management Physical Storage Standard was published on February 25, 2016. This standard specifies the requirements for the storage of physical records to insure that necessary controls are in place to prevent damage due to environmental hazards or natural disasters.</p> <p>Second, PG&E published Vital Records Management standard (TD-4017S),¹⁰⁵ which describes the requirements for creating and handling those records that are essential to PG&E’s ongoing gas operations and for complying with its legal or business obligations. It requires Gas Operations to create an inventory of vital records, which must be updated at least annually, as well as a plan to protect and ensure access to those records.</p> <p>PG&E sent copies of these record information management policies and procedures to SED during discovery and their quality, completeness, and usefulness was not raised by SED as an issue in this proceeding.¹⁰⁶</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰⁴ Ex. 5, Attachment W010 (Utility Standard TD-4016S, Rev. 1, Gas Operations Records and Information Management). This document was published on October 15, 2014. *Id.*

¹⁰⁵ *Id.*, Attachment W011 (Utility Standard TD-4017S, Rev. 0, Gas Operations Vital Records Management). This document was published on December 4, 2013. *Id.*

¹⁰⁶ Ex. 1 at 84 atch. B (PWA Report) (describing PG&E’s Response to SED Data Request No. 2); *see also* Ex. 4 at 2-5:18 to 2-6:2 (PG&E Reply Testimony, Singh).

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D.7. <u>Iron Mountain Records:</u> Develop and execute plan for evaluating historical Gas Paper Records currently at Iron Mountain (post Cow-palace review effort in 2011) and determine what should be scanned, and appropriate disposition.</p>	<p>Iron Mountain records are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.8. <u>Alignment With Corporate Records Management Policy and Refresh Schedule:</u> Establish process and protocol to align with Corporate Records Management Policy, and refresh Retention Schedule, Gas RIM standards, Gas guidelines and procedures, Gas process maps, and Gas data inventory based on a defined refresh schedule (Annual Review or other trigger such as a new Regulation).</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹⁰⁷ and alignment with Corporate Records Management Policy is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹⁰⁷ Ex. 1 at 1:22-23 (PWA Report).

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D.9. <u>Records and Information Inventory</u>: Create a gas records and information data inventory to identify and locate all (paper and electronic) Records and Information populations.</p>	<p>PG&E has already implemented this remedy for gas distribution records. In 2014, Gas Operations RIM published a revised Gas Operations Records Retention Schedule which was based on the gas records inventory. This inventory involved interviews with subject matter experts in each of the respective Gas Operations functional groups. The gas records inventory will be updated, as additional records are identified. An updated Records Retention Schedule was published in January 2016 as an attachment to the revised corporate standard, GOV-7101S. Gas Operations RIM is currently conducting the periodic review of the inventory, to include interviews with subject matter experts and the validation of inventory by supervisors and managers. The inventory certification of the updated inventory by directors and officers is scheduled for October 31, 2016.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D.10. <u>Records in Unstructured Data Stores</u>: Identify Records in Unstructured data stores, such as Shared Drives and Intranet.</p>	<p>Unstructured data stores are not an issue in this proceeding.</p> <p>In any event, PG&E has already implemented measures to address unstructured data stores for its distribution records. Specifically, as detailed in Chapter 2 of PG&E's Reply Testimony, in 2015, PG&E's Gas Operations organization initiated a multi-year effort to address the electronic records portion of the initiative, including the migration of certain electronic records from unstructured systems (such as SharePoint, share drives, and hard drives) to centralized structured databases (such as Documentum).¹⁰⁸</p> <p>Documentum is an electronic document management system that is being implemented to serve as PG&E's primary electronic records repository for unstructured data, such as word processor documents, PDFs, and images.¹⁰⁹ Once fully integrated, Documentum will interface with GD GIS and SAP and PG&E personnel will be better able to electronically standardize the records management processes and access the associated records.</p>	<p><i>In Progress.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>
<p>D.11. <u>Migration From Discrete Storage Locations</u>: Develop a strategy and process to migrate active and historical electronic information from discrete storage locations (<i>i.e.</i>, shared drives, PCs, etc.) to a centralized repository (<i>i.e.</i>, Documentum).</p>	<p>Migration of electronic data in discrete storage locations are not an issue in this proceeding.</p> <p>In any event, PG&E has already implemented an initiative to migrate unstructured data to Documentum. <i>See</i> PG&E's Response to PwC Recommendation D.10, <i>supra</i> p. C-51.</p>	<p><i>See</i> PG&E's Response to D.10, <i>supra</i> p. C-51.</p>	<p>Unnecessary.</p>

¹⁰⁸ Ex. 4 at 2-6:8-14 (PG&E Reply Testimony, Singh).

¹⁰⁹ *Id.* at 2-15:1-6 (PG&E Reply Testimony, Singh).

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.12. <u>Compliance Review on RIM Program Components:</u> Perform Gas Operations Compliance review on RIM Program components, such as Corporate Records Management Policy, Retention Schedules, and other related RIM procedures.</p>	<p>While RIM Program components are not an issue in this proceeding, PG&E has made significant investment in its RIM program, as described in testimony.¹¹⁰</p> <p>Moreover, PG&E sent copies of its updated RIM policies, standards and procedures to SED during discovery and their quality, completeness and usefulness was not raised by SED as an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.13. <u>Interim Audit Plans:</u> Create interim Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans.</p>	<p>PG&E uses a robust system of internal auditing, which is directly overseen by senior management, and which includes audits of recordkeeping practices.¹¹¹ Internal Auditing group performs audits to evaluate the effectiveness of controls on new and existing business processes, which allows management to then address any control gaps and check whether the processes are being implemented effectively.¹¹² As a reflection of the value PG&E places on its internal audit process, a risk compliance committee comprised of senior management is responsible for ensuring that corrective actions are implemented following an internal audit or any other QM review.¹¹³</p> <p>Thus, PG&E's current internal audit program goes beyond this proposed remedy.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has an ongoing audit process.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁰ *Id.* at 2-7:4 to 2-8:25 (PG&E Reply Testimony, Singh).

¹¹¹ *Id.* at 3-23:3-20 (PG&E Reply Testimony, Higgins).

¹¹² *Id.* at 5-22:16-19 (PG&E Reply Testimony, Singh).

¹¹³ Ex. 1 at 76:4-6 (PWA Report); Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 3-23:9-20 (PG&E Reply Testimony, Higgins).

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.14. Enhance Long Term Audit Plans: Once the RIM program is stabilized, update and enhance long term Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans.</p>	<p>See PG&E's Response to PwC Recommendation D.13, <i>supra</i> p. C-52.</p>	<p><i>In Progress.</i> See PG&E's Response to PwC Recommendation D.13, <i>supra</i> p. C-52.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.15. Review Gas Ops Business Processes: Review the current list of Gas Operations business processes to validate and document a comprehensive list of all gas operational processes (that should follow the full information lifecycle).</p>	<p>Gas Ops business processes are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has a list of processes and periodically updates them.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.16. Gas Business Process Maps: Evaluate and refresh Gas business process maps for the newly defined/validated list of processes, instituting a rigorous protocol for standardization and approval by process owners.</p>	<p>Gas business process maps are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>D. 17. <u>Revise Standards and Work Procedures:</u> Align and revise all Standards and Work Procedures to the updated list of all Gas Operations Processes.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹¹⁴ and thus are not an issue in this proceeding. Gas business processes are also not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.18. <u>Log of Special Projects and Initiatives:</u> Develop and maintain comprehensive log of all Gas Operations “special projects” and initiatives to ensure any new Records or data stores that may be created as a part of the effort has appropriate RIM practices.</p>	<p>New records or data stores created as a result of special projects and initiatives are not an issue in this proceeding and PWA noted PG&E’s control processes associated with GD GIS implementation.¹¹⁵ PG&E’s RIM team functions across Gas Operations to assure appropriate controls are established for gas distribution records.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁴ Ex. 1 at 1:22-23 (PWA Report).

¹¹⁵ *See, e.g., id.* at 55:30 to 56:8, 58:1-10, 58:19-26 (PWA Report).

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.19. <u>Challenges and Backlog of Gas Maps:</u> Address known challenges and backlog of Gas Maps.</p>	<p>PG&E already has a robust process to track the timely progress of distribution mapping updates and corrections. The Mapping Department utilizes SAP to track progress and monitor the status of mapping corrections with a target goal of completion within 30 days.¹¹⁶ Mapping management meets monthly to discuss Gas Mapping Department performance based on a monthly "Placemat," a dashboard the Mapping Department generates each month that tracks various performance metrics of the team.¹¹⁷</p>	<p><i>Completed.</i> PG&E has already implemented a process for distribution activities that addresses the goal intended by the remedy.</p>	<p>Unnecessary.</p>
<p>D.20. <u>Review of RIM Standards:</u> Add RIM Program standards to the five year standards review process in Gas Operations.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹¹⁸ and thus are not an issue in this proceeding. RIM standards are also not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has a review process for its standards.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁶ Ex. 4 at 4-11:29 to 4-12:3 (PG&E Reply Testimony, Trevino).

¹¹⁷ *Id.* at 4-3:8-12 & fig. 4-1 (PG&E Reply Testimony, Trevino).

¹¹⁸ Ex. 1 at 1:22-23 (PWA Report).

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Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.21. RIM Program Improvements: Once RIM program and processes achieve stability, identify and develop continuous improvement activities for the Gas RIM Program.</p>	<p>PG&E has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.¹¹⁹ The Company has made significant improvements since the publication of the PwC report four years ago.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.1. Data Cleansing Effort: Conduct rigorous and thorough Data Cleansing effort prior to any consolidation or migration of electronic data into new or interim systems.</p>	<p>As discussed in PG&E's response to SED proposed remedy (a), PG&E undertook a number of initiatives to identify discrepancies and gaps in its distribution records during the migration to GD GIS. <i>See</i> PG&E's Response to SED Proposed Remedy (a), <i>supra</i> pp. C-5 to C-7.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>
<p>E.2. Identify Data Gaps: Identify potential data completeness gaps through results of Data Cleanse exercises.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation E.1, <i>supra</i> p. C-56.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>

¹¹⁹ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

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<p>E.3. <u>Information for Future Processes</u>: As part of Business Requirements gathering efforts, evaluate what Information should be gathered to support future state Gas Operations processes and advancement of Integrity Management analysis.</p>	<p>While this is not an issue raised in this proceeding, PG&E already gathers information for future processes and integrity management analysis. As discussed in PG&E's Response to SED Proposed Remedy (a) and Adopted Transmission Recordkeeping OII Remedy 5, PG&E undertook an enormous effort to migrate its distribution records to GD GIS, SAP, and Documentum. It also implemented a number of initiatives using data analytics to improve the state of its records. <i>See</i> PG&E's Response to SED Proposed Remedy (a) and Adopted Transmission Recordkeeping OII Remedy 5, <i>supra</i> pp. C-5 to C-7, C-24 to C-25.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy. Gas distribution has the desired analytic capabilities with the implementation of GD GIS, continued use of SAP, and growing use of Documentum.</p>	<p>Unnecessary.</p>
<p>E.4. <u>Capture Paper-Based Records and Documents Electronically</u>: Building on Records digitization efforts from the MAOP Validation project, continue to capture paper-based records and documents electronically.</p>	<p>This proposed remedy is not applicable to this proceeding. Moreover, PG&E is using digitized records in its distribution MAOP analysis.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy. PG&E is already using digitized records to perform its distribution MAOP analysis.</p>	<p>Unnecessary.</p>
<p>E.5. <u>Stand-Alone Repositories</u>: Standardize the use of stand-alone repositories such as SharePoint and email so they can align and potentially integrate with RIM procedures going forward.</p>	<p>Stand-alone repositories are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

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<p>E.6. Email Storage: Create and execute process to transfer data captured in emails to appropriate permanent repositories and discourage the use of email as a data store/“personal electronic filing cabinet.”</p>	<p>Email storage is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.7. Shared Drives and Hard Drives: Identify and migrate official Records stored on network Shared Drives and local personal computer hard drives to a designated central repository (Documentum). Consider eliminating Shared Drives for some functions.</p>	<p>The use of shared drives and hard drives is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.8. Off-line Data Stores: Identify, develop, and execute remediation plan for other electronic “off-line” data stores such as floppy/hard disks, CDs/DVDs, USB drives, external hard drives, etc.</p>	<p>Off-line data stores are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

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Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>E.9. <u>Detailed Business Requirements Gathering</u>: Enhance Detailed Business Requirements Gathering for Technology Systems. This should include specific discussions with various relevant workforce populations on: User Interface, Gas Processes Work Flows, Reporting/Metrics, Taxonomy, Metadata, Security Access, and Protection Model.</p>	<p>Business requirements gathering is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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<p>E.10. Target Operating Model: Develop a holistic Gas Operations, Business Applications “Target Operating Model” that includes all Gas (Distribution and Transmission) systems, Records, and data stores.</p>	<p>Gas Operations operating model is not an issue in this proceeding.</p> <p>Moreover, PG&E has already implemented a number of technologies that meet the intent of this proposed remedy. These platforms enable PG&E to implement best practices for standardizing recordkeeping practices and improving its asset data.</p> <p>These platforms include GD GIS, which provides spatial information about distribution assets and attributes of assets (<i>e.g.</i>, size, type, and location), along with references to work orders and gas service record numbers.¹²⁰</p> <p>SAP includes an asset management database that contains equipment records, maintenance history and plans, gas leak data, preventive and corrective notifications, scheduling and cost collecting orders, material requisitions, warehouse management, financials, and cost accounting, as well as an inventory of data and maintenance plans related to regulation, valves, corrosion, leak survey, and instrument calibration for the gas distribution system.¹²¹</p> <p>Documentum serves as PG&E's primary electronic records depository, and stores both record content and record metadata (<i>e.g.</i>, record creation date, author, editor, versions, format, and lifecycle status), with full-text search capabilities.¹²²</p>	<p><i>In Progress.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>

¹²⁰ *Id.* at 2-11:25-29 (PG&E Reply Testimony, Singh).

¹²¹ *Id.* at 2-14:9-20 (PG&E Reply Testimony, Singh); *id.* at 4-11:29 to 4-14:16 (PG&E Reply Testimony, Trevino).

¹²² *Id.* at 2-14:32 to 2-15:23 (PG&E Reply Testimony, Singh).

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<i>(continued)</i>	The three systems interface with each other to provide information necessary to manage assets in real-time for prompt decision making, and can provide advanced analytic capabilities to improve the accuracy of asset data. ¹²³		
<p>E.11. Data Entry Quality Control: Ensure all system user interfaces in which new information or data points are entered, incorporate appropriate preventative and detective controls to help minimize data quality issues at point of entry.</p>	<p>PG&E's testimony describes data quality management in detail. For example, PG&E implemented the use of a mobile A Form, which includes many validation rules that allow the leak repair information to be captured completely and accurately as the leak is repaired in the field.¹²⁴</p>	<p><i>Completed.</i> PG&E has implemented the intent of this remedy for distribution activities.</p>	<p>Unnecessary.</p>
<p>E.12. Intranet as Resource: Leverage the PG&E Intranet Gas Operations page for a centralized, searchable, and easily navigable resource of all Gas Policies, Procedures, and Standards (including RIM-related).</p>	<p>Accessibility of Gas policies, procedures, and standards is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹²³ *Id.* at 2-15:24 to 2-16:17, 2-18:11-14 (PG&E Reply Testimony, Singh).

¹²⁴ *Id.* at 2-20:14-18 (PG&E Reply Testimony, Singh).

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<p>E.13. Legal Hold: Develop and execute formal “Hold In Place” process for Documentum to facilitate preservation under Legal Holds. Ensure reporting/auditing of Holds In Place is also included.</p>	<p>Legal hold process is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.14. Contract Management System Plug In/Interface to Documentum: Consider a Contract Management System plug-in/interface to Documentum system to facilitate robust, consistent, and controlled Gas Contracting lifecycle process.</p>	<p>Contract management is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.15. Technology and Systems Landscape: Reassess/re-examine the existing Technology and Systems landscape periodically to determine if Gas Operations needs are still being met in the future.</p>	<p>As discussed throughout PG&E’s testimony, PG&E is continually evaluating its technology and systems to improve its gas distribution recordkeeping practices. In any event, technology and systems landscape is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

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<p>E.16. <u>Gas IT Technical Support:</u> Create and implement a Gas IT technical support sub-group (via the phone help line) that can more specifically address Gas Operations systems issues.</p>	<p>IT technical support is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>