APPENDIX A

CPSD Proposed Findings of Fact

1. Currently PG&E does not know the source of the section of pipe that failed on September 9, 2010.

2. Without source information and specifications, PG&E lacked the necessary design factors to calculate the acceptable operating stress for this section of pipe during its life of service in Line 132.

3. Because PG&E lacked records about the pipe installed in Line 132, it operated the line without knowing whether the operating pressure exceeded the limits set by code to ensure safe operations.

4. PG&E's records do not establish whether the failed pipe section was reused pipe, salvaged from some other location in the PG&E transmission system.

5. Since PG&E has no records of the source of pipe that is Line 132 segment 180, it cannot prove that the pipe was new.

6. PG&E's records cannot establish the manufacturer or specifications of the failed pipe.

7. PG&E's records do not establish whether PG&E attempted to meet any of the 1955 ASME section 811.25 requirements to inspect and hydrostatically test before reusing pipe.

8. In the case of Segment 180, PG&E did not attempt to meet most of the ASME section 811.25 requirements to inspect and hydrostatically test before reusing pipe, because either a visual inspection or a hydrostatic test likely would have stopped the pipe installation.

9. If the failed pipe was salvaged, PG&E has no records that show that it was cleaned, inspected, or hydrostatically tested to establish the appropriate maximum allowable operating pressure during service in Line 132.

10. If the failed pipe was salvaged, PG&E failed to meet the inspection and other minimum requirements for the safe reuse of salvaged pipe.

11. 90 feet of pipe from a portion of Line 132 was replaced and reused in 1956 on the Segment 180 installation.

12. A 90 foot span of Line 132 that initially extended across the creek canyon was subject to added stress from being unsupported and from a landslide.

13. The job file for the job that installed Line 132 from Crystal Springs to Martin Station in 1948-1949 is missing construction records that would have detailed the design and construction of the 90 foot span of Line 132 across creek canyon.

14. PG&E's records do not foreclose the possibility that the failed pipe was slated to be junked and was instead installed at San Bruno.

15. In 1955 PG&E's records at the Milpitas yard identify an approximately 30 foot long, 30 inch pipe made of pups and in a length consistent with the failed pipe.

16. PG&E claims that that pipe was scrapped, but has no records which show anything about the pipe's destination, whether it was a junkyard, the San Bruno site, or elsewhere.

17. PG&E's defenses speculate, without evidentiary support, that the bad pieces of pipe containing several pups are not reused.

18. The San Bruno pipe explosion is proof that PG&E engaged in inherently unsafe practices when it failed to create and retain orderly records of new, salvaged, reconditioned, reused, or junked pipe.

19. The unavailability of construction records for line 132 undermined the safe operation of the line .

20. Construction records are critical to the analysis of the causes of the San Bruno pipe failure.

21. PG&E failed to create and/or retain construction records for GM 136471, the project that installed segment 180 of line 132.

22. If PG&E had created and retained orderly records of the purchase, installation, salvage, reconditioning, inspection, and reuse of pipe installed in its transmission system, PG&E would not have selected that pipe for project GM 136471, because it did not meet PG&E's own standards for high pressure transmission pipe.

23. At the time of the San Bruno explosion, PG&E had no construction records in its Walnut Creek engineering facility or elsewhere for Job Number GM 136471.

24. After the pipeline explosion in September 2010, PG&E did locate a Job File for GM 136471 in historical accounting records kept at the Bayshore Records Center in San Francisco, a facility where PG&E kept inactive records.

25. The file contains accounting records that provide some information regarding requisitions for pipe, but no actual design or construction records.

26. The job file contains nothing to identify the source of the pipe used in the job, pipe specifications, previous pipe service (if any), or anything pertaining to its installation.

27. The job file information that exists does provide erroneous specifications of the pipe, such as its strength.

28. PG&E's lack of knowledge as to the specifications of the failed pipe is a direct result of PG&E's poor records.

29. A thorough review of both job files relevant to projects on Line 132 between 1952 and 1956 at the creek canyon reveals no relevant records to explain how or when San Bruno Creek was filled.

30. None of the construction drawings for either of the projects showed in any reasonable detail the pipe configuration that actually failed on September 9, 2010.

31. PG&E operated this segment of Line 132 for 55 years without construction drawings showing the details of installation.

32. PG&E's job files are virtually unusable for those requiring accurate information accessibly and promptly, as PG&E demonstrated at its Cow Palace MAOP validation project.

33. PG&E's MAOP validation project in response to the NTSB's urgent January 3, 2011 recommendation, and the Commission's order of the same day, required 1500 person hours of searching through PG&E 's job files.

34. The absence of records detailing the construction of Segment 180 created an unsafe condition.

35. PG&E endangered its employees and the public by operating Line 132 without knowing the details of the construction of Segment 180 and made no effort to find or recreate the original construction file from 1956 to 2010.

36. No evidence shows that PG&E ever reviewed the job file for 1956 construction of Segment 180 to ascertain what missing information would be necessary to obtain or reconstruct for safe operation of Segment 180.

37. PG&E operated Line 132, the high pressure pipeline, in the absence of information about the construction of Segment 180 of Line 132.

38. The absence of pressure records for the pipe installed on Segment 180 of Line 132 placed PG&E's employees and the public at risk of exposure to a pipeline failure under normal operating conditions.

39. In 1956 PG&E represented to this Commission that it followed the ASME B31.1.8 standard from 1955.

40. PG&E again assured the Commission in 1959 and 1960 that it continued to comply with ASME engineering standards.

41. It is most likely that PG&E did not conduct a hydrostatic test on Segment 180, and that a proper hydrostatic test might have caused the defective pipe to fail at the time.

42. If there ever were records of a hydrostatic test on segment 180, PG&E has either discarded or lost them.

43. From 1978 to 2004, PG&E operated Segment 180 of Line 132, at a Maximum Allowable Operating Pressures (MAOP) of 390 psi.

44. Starting in 2004, and continuing until September 2010, PG&E operated the line at an MAOP of 400 psi.

45. PG&E operated Line 132 at an MAOP of 390 psi for 26 years and through at least nine engineering reviews.

46. PG&E has evidently lost or cannot locate the records which once existed and supported the 390 psi MAOPs for sections of Line 132.

47. In the absence of the underlying records for the 390 psi, PG&E decided in 2004 to uprate the MAOP of Line 132 to 400 psi.

48. Regulations require a hydrotest before uprating a segment.

49. The 2004 MAOP increase on Line 132 from 390 to 400 psi was implemented without a hydrostatic test of the involved portion of Line 132. A hydrostatic test was required by regulations to ensure integrity of the pipeline at the higher pressure rating.

50. The evidence does not support the claim that PG&E operated at 390 psi by error for 25 years.

51. It appears that PG&E changed the MAOP on Line 132 from 390 to 400 psi for the entire Line 132 in 2004 by editing historical records.

52. The record of this proceeding contains no evidence to support PG&E's defense pertaining to industry practice.

53. Even if others in the industry had disposed of legally required records, or otherwise violated records requirement, it would have no bearing on this investigation of PG&E's practices and records.

54. When problems occurred in the electrical system on September 9, 2010, personnel at Milpitas and in the San Francisco Control Room lacked the records of the maintenance sequence of steps that could have helped them determine and resolve the cause of the problems.

55. An adequate Clearance Procedure might have prevented the electrical problem that led to the over pressuring of the Peninsula pipelines and, thus, might have averted the San Bruno explosion.

56. At the least, an adequate Clearance Procedure could have made recovery quicker because there would have been a traceable step-by-step record of each change that had been made to the electrical system.

57. PG&E failed to follow its own safety procedures to create a clearance record for the electrical work performed at the Milpitas Terminal on September 9, 2010.

58. PG&E failed to follow its records procedures, called the "clearance process," for planning the September 9, 2010 work at Milpitas Terminal.

59. If PG&E personnel had followed the clearance procedure, on September 9, 2010 drawings would have been readily available to the maintenance crew doing the work and to Gas Control personnel who were attempting to help once problems arose.

60. PG&E's failure to require strict adherence to its safety procedure is an important record system failure.

61. The Operating and Maintenance Instructions manual at the Milpitas Terminal was out of date on September 9, 2010, possibly by as much as 19 years.

62. The manual was a useless reference when the emergency occurred on that day and PG&E lost control of its electrical controls and its ability to control rising Segment 180 pressures.

63. PG&E has never verified that the latest Operating and Maintenance Instructions manual was at the Milpitas Terminal on September 9, 2010.

64. PG&E personnel were unable to use the manual to cope with the emergency, because the pipe failed about an hour after PG&E lost control of Line 132 pressure.

65. On September 9, 2010, PG&E personnel at the Milpitas Terminal had access to an outdated map and control room personnel had access to an incomplete diagram of the Milpitas Terminal.

66. When working to attempt to regain control of pipe pressure by manually opening or closing valves, PG&E personnel needed access to current and accurate drawings.

67. Inaccurate representations of the system, either in hard copy, or electronic, can lead to inappropriate and unsafe operational decisions during regular operations as well as during emergencies.

68. PG&E's record, i.e. its operating drawing, was inaccurate, creating an inherently unsafe operating situation.

69. Based on the records that PG&E did keep of the events leading to the San Bruno rupture, it is possible that the Milpitas Terminal By-pass line was not valved closed at least part of the time leading up to the San Bruno pipe explosion.

70. Due to PG&E's recordkeeping shortfalls, operators lacked the data essential for fully understanding what was happening in its gas transmission system when things went wrong at the Milpitas Terminal on September 9, 2010.

71. PG&E conducted electrical work at the Milpitas Terminal without appropriate back-up software available for valve controllers on Line 132 segment 180.

72. When electrical power was lost, the valve controllers no longer functioned properly to control line pressure.

73. PG&E's policy and practice, as stated in its Operating & Maintenance Instructions Manual, is to store a copy of back-up software on site at the Milpitas Terminal.

74. Loss of programming for any instrument or equipment, such as operating valves, creates an unsafe operational situation.

75. The inability to immediately correct the problem by reloading programming prolongs the equipment outage and the unsafe operating condition.

76. PG&E failed to keep back-up software at the Milpitas Terminal.

77. In a late response to a data request, PG&E stated that the missing software was iconfig, which is a standard Microsoft module that allows configuration of a USB connection. This software is readily available over the internet.

78. Had the maintenance technician at Milpitas been able to restore the programming to the controllers immediately, Gas Control operators and the maintenance technician would have been able to focus on other causes.

79. The data transmission collection and display system for PG&E's gas transmission system is referred to as Supervisory Control and Data Acquisition (SCADA).

80. The SCADA system provides data to the control rooms.

81. PG&E's SCADA did not provide to PG&E personnel the information needed in the control room and elsewhere to deal effectively with the gas emergency that began after 5PM on September 9, 2010.

82. SCADA did not provide PG&E personnel with sufficient information to determine the best course of remedial action to take.

83. PG&E's electronic SCADA system, in use on September 9, 2010, did not display critical information in a way that was readily recognized by Gas Control Operators working under abnormal operating conditions.

84. The unsafe condition of the SCADA system and deficient SCADA information contributed to the inability of the Gas Control Operators to timely evaluate data related to the pipeline explosion in San Bruno.

85. Control room operators failed to acknowledge the SCADA alarm that was an indication of the San Bruno pipe failure and did not recognize the drop in pressure until almost 30 minutes later, when someone from another location called in and asked them to look for the pressure drop on their SCADA screens.

86. The NTSB found PG&E's supervisory control and data acquisition system limitations contributed to the delay in recognizing that there had been a transmission line break and quickly pinpointing its location.

87. PG&E's gas control room was able to first recognize, 34 minutes after the rupture, that Line 132 was experiencing a leak.

88. PG&E's Emergency Response Plans were difficult to use and were a source of confusion for the Control Room operators.

89. PG&E's emergency plan was ineffective, deficient, and unsafe.

90. The 95 minutes that PG&E took to stop the gas flowing from the rupture site might have been significantly less if PG&E had had better emergency planning and materials.

91. As written, PG&E's emergency plan was not useful for responding to the catastrophic gas line break and fire.

92. Instead of following the applicable uprating rules federal regulations and GO 112, PG&E edited historical documents to change 390 to 400 psi for Line 132.

93. Had PG&E hydrostatically tested Line 132 to uprate it in compliance with state regulations, Segment 180 would have been tested to a pressure above 400 psi, and it would have failed under controlled testing conditions, requiring replacement of the pipe.

94. Operating a high-pressure gas transmission line above the Maximum Allowable Operating Pressure (MAOP) is inherently unsafe because it may damage the integrity of the pipe and can result in pipe failure.

95. PG&E operated Line 132 in excess of 390 psi MAOP on at least three occasions without following regulations that required hydrostatically testing the line before upgrading it to 400 psi MAOP.

96. On the third occasion of operating above 390 MAOP, Line 132 failed, resulting in the pipeline explosion in San Bruno.

97. The Commission and PG&E both directed that all evidence relevant to the San Bruno incident be preserved.

98. PG&E likely destroyed highly relevant evidence from Brentwood Control Room video camera six.

99. PG&E's data response from October 10, 2011 stating that the Brentwood facility video recording for September 9 and 10 was overwritten after 60 days is contradicted by PG&E's own later data response from March 9, 2012 that no video was recorded onto its DVR.

100. Because PG&E's October 10, 2011 and March 9, 2012 data responses are contradictory, one or both of them must be false.

101. In several data responses to CPSD PG&E failed to identify all people present at the Milpitas terminal who were working on the pressure problem of September 9, 2010.

102. Failure to identify all personnel that CPSD seeks can impede CPSD's investigation and compromise the Commission's ability to make a fully informed decision.

103. Job files are PG&E's primary source of information about the construction of PG&E's pipelines.

104. Missing PG&E job files mean that PG&E is missing data, including virtually all information about a particular construction project, required for a successful risk assessment of its pipelines.

105. Missing job files, and missing information in job files that do exist, do not constitute anything close to the full measure of PG&E's job file deficiencies that severely hamper PG&E engineering of a safe gas system.

106. PG&E has identified job files as its primary source of information about pipeline characteristics.

107. PG&E also has many job files that are incomplete.

108. PG&E has also lost track of some job file record numbers issued over time.

109. Engineering and construction records are critical to the ongoing safe operation and maintenance of a gas transmission system because the operator must depend on these records when making operating and maintenance decisions during the life of the facility.

110. PG&E created a set of Pipeline History Records, which were the source of the data used to develop its Pipeline Survey Sheets, which in turn contained the data that populated PG&E's GIS system.

111. PG&E lost or destroyed the underlying Pipeline History Files, making it impossible for PG&E to verify the quality of the GIS data.

112. PG&E personnel have relied on incorrect GIS data in the day to day operations of the Transmission System.

113. PG&E lost or destroyed the underlying Pipeline History Files, perhaps as early as 1987.

114. In 1969, PG&E created Standard Practice 463.7 to create and maintain Pipeline History Files for the life of the facility.

115. When asked to produce Pipeline History Files, PG&E responded that it "believes" SP 463.7 became inoperative in the early 1990's when PG&E initiated the transition to its electronic Geographic information System (GIS).

116. PG&E no longer maintains Pipeline History Files.

117. Because PG&E had failed to retain a good and complete set of job files, when it disposed of the Pipeline History Files it was actually discarding the only copy of some records.

118. Commission Resolution No. FA-570, adopted in 1976, provided for a new document retention policy for ratemaking documents, and is totally irrelevant to pipeline safety record preservation requirements.

119. The Commission never authorized PG&E's destruction of its historic pipeline safety records.

120. By destroying the Pipeline History Files, PG&E eliminated one source of traceable and verifiable records that should have been retained to ensure the safety of pipeline operations.

121. As of August, 2012, PG&E was missing pressure test records for strength tests on at least 23,761 segments or lengths of pipe.

122. Thousands of strength test records are missing from the period 1956 through 2010.

123. These strength tests for which PG&E is missing pressure test records should have been done between January 1, 1956 and January 1, 2011. These tests were required by ASME standards beginning in 1955; General Order 112, 112A and 112B from 1961 until 1970; and 49 CFR sections 192.503, 192.505, and 192.507 beginning on August 19, 1970.

124. PG&E's failures to retain strength test records are violations that undermine and diminish the safety of its pipeline system that PG&E owes to the California public, its ratepayers, and to its own employees and contractors.

125. Violation of strength testing and record maintenance requirements was a factor in the San Bruno tragedy of September 9, 2010.

126. PG&E's violations of missing pressure test records for strength tests are the most serious violations possible.

127. PG&E failed to retain many weld maps and weld inspection records.

128. Historical records of the weld inspections and the weld maps are critical to the ongoing safe operation of the transmission pipelines.

129. Some surviving records of welds in PG&E's transmission lines show that substandard welds were accepted for service, suggesting there may be pipe in the present transmission system that do not meet criteria for safe, ongoing gas transmission service.

130. Line 132 was shown to have substandard welds accepted for service.

131. PG&E is missing years of operating pressure records required for safe operation of the pipes.

132. PG&E's operating pressure records the company has retained are so inaccessible that they are essentially unavailable.

133. The impact PG&E's missing operating pressure records has on safety is that integrity management cannot be meaningfully evaluated, pressure cycling evaluations required by the law cannot be accurately conducted, and that it remains unknown whether PG&E has conducted required testing in compliance with the law.

134. Even though it had a leak detection program in place since at least 1958, PG&E failed to document and save data from one of its earliest leak records systems, the A-Forms, in a way that made the data retrievable.

135. PG&E's A-Forms are frequently only partially completed.

136. The deficiency with PG&E's A-forms made it impossible for PG&E to use its leak detection program to properly care for its pipes and make them safe on an ongoing and long-term basis.

137. PG&E's A-Forms would have been kept in the Pipeline History Files that PG&E discarded.

138. PG&E has an incomplete and inaccessible set of post 1970 leak records.

139. Many of PG&E's individual post-1970 leak records are inaccurate and incomplete.

140. Large numbers of leak records that may technically exist are completely unknown and unavailable for PG&E integrity management personnel to review and consider.

141. PG&E reduced the significance of leak data in the Integrity Management process from 1984 to present day.

142. Leak records are important to the safe operation of PG&E's pipelines. The safety risks of allowing leaks to go unattended include exposing people to harmful gas, the potential for

explosions where gas accumulates in closed areas, and total pipe failures resulting in catastrophic damage like the San Bruno pipe failure in September 2010.

143. Before 1970, PG&E commonly reused pipe.

144. After PG&E installed its reused pipe, PG&E could not identify the location of the pipe and its characteristics and specifications.

145. PG&E believed it needed to properly inspect, repair and test pipe before reusing it, but reduced safety by failing to do these things before reuse.

146. PG&E's failure of records and data has created a system of pipelines that remains unsafe today, and will continue to be so until and unless PG&E identifies with certainty the location of each piece of reused pipe in its system.

147. Without records to provide critical information about reused pipe, it is impossible to be sure that another pipe failure will not occur on a line where a reused pipe, not suited for the new operating conditions, was installed.

148. PG&E cannot determine from its records whether pipe specifications data entered into its integrity management risk assessment model are accurate for every pipe segment.

149. Important pipeline data in PG&E's Geographic Information System ("GIS") is erroneous and incomplete.

150. The erroneous and incomplete information in PG&E's GIS pertains to a myriad of characteristics, including pipe specifications, pipe manufacturer, reuse of pipe, weld characteristic or seamlessness, pipe location, MAOP, populations near the pipe, and others.

151. PG&E indicated that its entire system of approximately 5,324 miles of pipeline in its transmission system has one or more assumed or unknown values in its GIS and pipeline survey sheets.

152. Errors in records have been carried forward from one system to the next without checks for accuracy or, in some cases, even reasonableness.

153. PG&E has no record of a specific Quality Assurance/Quality Control program for the transfer of data into the GIS.

154. The absence of accurate and complete information in PG&E's GIS greatly impedes safe operation and maintenance of PG&E's gas transmission system because gas control operators, engineers, maintenance personnel, and emergency responders rely on this data in making their decisions.

155. Integrity management (IM) is the process by which PG&E evaluates the safety risk to its gas pipes, and prioritizes the replacement of pipe or other safety measures to most effectively reduce that risk and the danger to the public of gas pipe failure

156. PG&E's integrity management decisions have been unsafe because they result from the incomplete, inaccurate, and inadequate data fed into its inadequate integrity management model.

157. At the time of the San Bruno explosion, PG&E was unaware of a 1988 weld failure on another section of Line 132, even though a weld failure report from the same year indicated that PG&E had repaired a leak on Line 132 that resulted from a manufacturing defect in the longitudinal weld of the pipe.

158. Instead of following the requirement to keep the report for the life of the facility, acting on this report, and inspecting similar pipe welds on Line 132, PG&E lost the report.

159. PG&E did not include the information from the 1988 weld failure report in its Integrity management model.

160. PG&E failed to retain a 1963 weld failure report that could have provided information to its engineers and managers concerning the expected service life and potential integrity of pipe installed in its Bay Area transmission pipeline system.

161. The lost 1963 weld failure report may have informed PG&E's Integrity Management engineers of potential manufacturing threats to be considered in the development of the IM program.

162. Proper retention of the 1963 weld failure report and response to its findings may have led to inspections and repairs to pipe welds in the PG&E pipeline system where bad welds have so far remained undetected.

163. PG&E is missing strength test records for 23,760 gas transmission pipe segments for pressure tests in populated areas.

164. No evidence exists to identify the number of segments that were pressure tested.

165. No evidence exists to identify the number of segments that were pressure tested but for which PG&E created no records of the tests.

166. No evidence exists to identify the number of segments for which records were created and later discarded, destroyed, or lost at an unknown later time.

167. PG&E failed to produce records that were traceable, verifiable, or complete to ensure that pressure tests or pressure strength records as required by law were conducted for any of the 23,760 missing strength test records that occurred after 1955.

168. Of the 23,760 missing strength test records, those reflecting strength tests performed, or required to be performed, during or after 1955 were necessary to establish MAOP, and to legally operate a pipeline.

169. PG&E found that more than 94% of its approximately 87,000 job files in its Emeryville facility were missing weld records. This percentage is based upon a representative sample of PG&E's total job files.

170. Most of PG&E's job files are missing weld records.

171. Because PG&E's job files are missing weld records, it is unknown whether PG&E's gas transmission pipe welding has met proper standards.

172. Because most of PG&E's job files are missing weld records, it is unknown whether PG&E may have created weld records, but destroyed or discarded them at some time after creating them.

173. There are large numbers of job files missing from PG&E's current master collection in Emeryville.

174. PG&E is missing numerous job files for pipelines throughout its system.

175. PG&E's missing job numbers or 'sequence gaps' correspond to missing job files.

176. Many of PG&E's gas transmission job files were missing prior to the San Bruno explosion.

177. Significant information about PG&E's pipeline attributes kept in PG&E's GIS data is inaccurate or erroneous, and has been so since the inception of PG&E's first GIS database.

178. Multiple sources of information that migrated to PG&E's GIS system, including job files, pipeline density survey sheets, and pipeline survey sheets, are records with their own missing, erroneous, and inaccessible data associated with them.

179. A significant amount of PG&E's GIS data is missing, and has been so since the inception of PG&E's first GIS database. PG&E's GIS is a primary source of information in PG&E's integrity management program.

180. Of the 112,959 entries in PG&E's audit change log since the San Bruno pipeline explosion, a large number reflect changes necessary to address inaccurate GIS records that existed before the San Bruno pipeline explosion.

181. PG&E failed to forthrightly respond to a data request and to timely disclose its relevant GIS audit change log, with a significant number of data errors that CPSD had requested earlier.

182. PG&E's leak records are incomplete and difficult to retrieve.

183. PG&E has not established that it ever rescinded SP 463.7 (its requirement to keep pipeline history files).

184. PG&E had an ongoing duty to keep each pipeline history file for the life of the facility.

185. PG&E was required to follow its requirement to keep pipeline history files for the life of the facility, but did not.

186. PG&E's files are missing an undetermined number of records pertaining to an undetermined number of miles of reused pipe currently in operation, and the location and characteristics of those pipes remain unknown.

187. It is possible that the pipe that ruptured in San Bruno was reused.

188. Many of PG&E's pipeline failure metallurgical reports are missing and PG&E's Analytical Report Library, which contains its metallurgical reports, is incomplete.

189. PG&E management failed to comprehensively address mandatory recordkeeping requirements across PG&E's gas transmission system.

190. PG&E practiced substandard records management across its gas transmission system.

191. Given that PG&E is missing many historical gas transmission records, PG&E cannot operate its pipeline system safely.

192. PG&E's lack of installation and reconditioning standards of re-conditioned pipes from the 1960's and earlier compromises the safety of re-conditioned pipes of that vintage.

193. The ARMA generally accepted recordkeeping principles are accountability, compliance, transparency, availability, integrity, protection, retention, and disposition. Each of these principles have been accepted and recognized for decades as principles of good records management.

194. The overall state of PG&E's gas pipeline records and information has been insufficient to promote safety.

195. PG&E's recordkeeping practices have been deficient and have diminished pipeline safety.

196. By following five of its own retention requirements, PG&E failed to keep five different types of records for a period necessary to comply with the law.

197. PG&E prematurely disposed of hundreds of leak survey maps beginning on April 16, and needed those maps to safely operate its system.

198. PG&E prematurely disposed of hundreds of line patrol reports beginning on September 1, 1964 and needed each of those reports to safely operate its system each day until September 9, 2010.

199. PG&E prematurely disposed of hundreds of line inspection reports beginning on April 6, 1994, and needed each of those reports to safely operate its system each day until September 9, 2010.

200. PG&E prematurely disposed of hundreds of pressure test records beginning on April 6, 1994, and needed each of those reports to safely operate its system each day until September 9, 2010.

201. PG&E's failure to retain pressure test records dates back to 1965.

202. PG&E prematurely disposed of hundreds of transmission line inspection documents at some time the before San Bruno rupture, and needed each of those documents to safely operate its system each day until September 9, 2010.

203. PG&E failed to retain each of the strength test record reports relating to 23,760 pipe segments.

204. PG&E has not performed any records audits.

205. PG&E failed to properly use records to identify problematic joints on Lines 132 and 151 in its 1995 GPRP, which meant the 1995 GPRP failed to properly consider whether to replace Lines 132 and 151.

206. After 2010 PG&E failed to re-consider replacing Lines 132 and 151 although a 2007 memo to the company identified problematic joints in both lines.

207. Until 2007, PG&E's job file dating records caused it to incorrectly gauge the manufacturing date age of pipe for Lines 132 and 151, thereby misinforming its decisions about whether to replace portions of these lines prior to the San Bruno pipeline explosion.

208. PG&E did not access the information in its own job estimate files to determine that Line 132 had problematic Bell Bell with Chill Ring ("BBCR") joints until it received a 2007 memo, 23 years after the 1984 Bechtel report that informed PG&E that problematic BBCR joints existed in pipes of the same vintage as Line 132.

209. The manufacture date of PG&E's reused pipe is often unknown, and significantly earlier than the installation date.

210. GIS identifies the date of installation as the date of pipe manufacture.

211. The actual date of installation and the actual date of manufacturer can be 35 years or more apart.

212. PG&E has an unknown number of reused pipes in service in its system.

213. The location and characteristics of an unknown portion PG&E's reused pipe is unknown.

214. PG&E's records cannot track the location and characteristics of reused pipe.

215. Pipeline characteristics are unknown or assumed for each mile of over 5000 miles of PG&E's transmission pipeline system.

216. Pipeline characteristics are identified, if available, in PG&E's job files and in GIS.

217. Unknown and assumed pipeline characteristics of pipe in service include manufacture dates, age of pipe, type of welds. joint characteristics, leak history, pressure testing data, installation, MAOP, and operating history.

218. Line 132 is older pipe of the vintage that is within the scope of the FEMA earthquake study, and is therefore prone to damage and potential failure during large earthquakes.

219. PG&E's current leak database, IGIS, lacked at least 1,000,000 of PG&E's historic leak records.

220. As a result of PG&E's failure to map tens of thousands if not a hundred thousand jobs, PG&E has failed to perform timely leak surveys.

221. PG&E's failure to perform timely surveys is another reason for a large number of missing or uncompleted leak survey records.

222. PG&E knew from at least as early as 1984 that a significant portion of its total leak history data was inaccurate.

223. PG&E believed by 1984 that it had under-recorded leaks in its system.

224. PG&E has historically maintained many inaccurate and incomplete leak records.

225. Inactive leaks before 1999 were not transferred into PG&E's leak data base.