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***Pacific Gas and  
Electric Company***<sup>®</sup>

March 30, 2011

Joanne Hayes-White  
Chief of Department  
San Francisco Fire Department  
698 Second Street  
City and County of San Francisco  
San Francisco, California 94107

Dear Chief Hayes-White:

I am writing in connection with your and Mayor Lee's leadership of the Utility Infrastructure Safety Review established by the City and County of San Francisco last year. On March 17, 2011, PG&E received numerous requests for information from City Attorney Dennis Herrera regarding the PG&E gas transmission lines that serve San Francisco (Lines 101, 109 and 132). PG&E is committed to continuing the positive and cooperative relationship we have established with you and Mayor Lee in regards to pipeline safety. In following with this established line of protocol, we are providing directly to you the enclosed responses to City Attorney Herrera's information requests.

As always, please call on me if we can provide additional information or facilitate in any way the Utility Infrastructure Safety Review.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Kirk Johnson'. The signature is fluid and cursive, with a long horizontal stroke at the end.

M. Kirk Johnson

cc: City Attorney Dennis Herrera  
Mayor Edwin Lee

Enclosures

## Responses to Information Requests

City Attorney Herrera's March 17, 2011 letter contained 32 information requests regarding Lines 101, 109 and 132 in San Francisco. PG&E restates each question and responds below and in the enclosed attachments.

### General Information As To Transmission Lines Within San Francisco

For existing transmission pipelines within San Francisco, we request the following information as to each pipeline segment:

1. Date of installation.

Please see the enclosed spreadsheet. Among other things, this spreadsheet shows the year of installation for each pipeline segment in Lines 101, 109, and 132 in the City and County of San Francisco.

2. Original date of manufacture and design type.

PG&E understands this question as asking for the original date of manufacture of the pipe in each segment in Lines 101, 109 and 132 in San Francisco. The date pipe is manufactured is not information that is kept in PG&E's records. With respect to "design type," the enclosed spreadsheet details numerous design characteristics regarding both pipe and pipeline components in Lines 101, 109 and 132.

3. Size of the pipe, Normal Operating Pressure, Maximum Operating Pressure, and Maximum Allowable Operating Pressure for each line, and for specific segments if these measures vary by segment.

PG&E does not maintain data referred to as "Normal Operating Pressure." Please see the enclosed spreadsheet for the other requested information.

4. Whether any segment of pipe is seamed or welded, and if so, the type of seaming or welding.

Please see the enclosed spreadsheet.

5. The methodology used to establish and validate the MAOP for each line or segment, if the methodology varies by segment.

PG&E is in the process of validating the MAOP documentation for all 5700 miles of its transmission pipelines. The documentation for the vast majority of the 1805 miles located in HCAs has been collected and reviewed. On March 15 and 21, 2011, PG&E provided to the California Public Utilities Commission (CPUC or Commission) detailed reports regarding the MAOP validation process, which can be viewed at <http://www.cpuc.ca.gov/PUC/events/sanbruno.htm>. In addition, PG&E has uploaded maps to its website that show the pipelines for which strength test and/or historical operating pressure documentation have been identified. (See <http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.)

6. Expected design lifetime.

A properly protected pipeline can be safe and useful indefinitely. To ensure safe, long-term utilization of its pipelines PG&E employs regular inspections, maintenance and engineering evaluations to confirm that the protection and maintenance systems are performing properly.

7. Plans for replacement/upgrading.

The existing transmission pipelines in and around San Francisco are being reviewed as part of PG&E's Pipeline 2020 program to determine whether particular pipelines or pipeline segments should be replaced or modernized. Also, in connection with its MAOP validation project, PG&E plans to perform strength tests and, in some instances, replace pipe on 152 miles of transmission pipeline in 2011, which includes pipe in San Francisco. (See response to Questions No. 10, 13, and 23 below, and Map 26 at <http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.)

8. Records or data reflecting the above information.

Please see the enclosed spreadsheet for specifications regarding Lines 101, 109 and 132. Additionally, PG&E's website contains detailed information regarding the gas transmission system located in and around San Francisco, PG&E's Pipeline 2020 program, and other system and safety-related information. (See <http://www.pge.com/myhome/edusafety/systemworks/gas/>.)

9. Test and inspection records for the original installation as well as any subsequent modifications.

As noted above, PG&E is currently validating the MAOP of the pipelines in its transmission system. Among other things, PG&E has identified strength test documentation related to transmission pipelines in HCAs, including in San Francisco. PG&E's detailed reports on this work can be obtained on the CPUC website at <http://www.cpuc.ca.gov/PUC/events/sanbruno.htm>. PG&E also has made available on its website maps showing the gas transmission lines, by location, for which strength test documentation has been identified. (See Map 26 at <http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.) Subsequent work will focus on the validation of MAOP based on engineering analysis, not only of the mainline pipe in PG&E's entire transmission system but also of each component, such as valves, sleeves, bends, fittings, etc.

10. Does PG&E have plans to perform further testing or examination of the existing transmission pipelines or pipeline segments within San Francisco? What type of testing or examination is planned and for which pipelines or segments?

The existing transmission pipelines in and around San Francisco are being reviewed as part of PG&E's Pipeline 2020 program to determine whether particular pipelines or pipeline segments should be replaced or modernized. Also, in connection with its MAOP validation project, PG&E plans to perform strength tests and, in some instances, replace pipe on 152 miles of transmission pipeline in 2011. In San Francisco, PG&E plans to hydrotest the section of Line 132 from Geneva Avenue to the San Francisco Gas Load Center, which is near 23<sup>rd</sup> Street and Illinois Street. (See Map 26 at

<http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.) Additionally, PG&E performs annual leak surveys on all of the transmission lines in San Francisco. Following the San Bruno tragedy, PG&E immediately conducted an unscheduled, system-wide leak survey, which included the lines in San Francisco. PG&E also regularly conducts integrity management assessments. With respect to the transmission lines located in San Francisco, PG&E conducted external corrosion direct assessments on Line 101 in 2008, and on Lines 109 and 132 in 2009. These lines are next scheduled for assessment in 2015 and 2016, respectively.

11. Locations, dates and results of historic hydrostatic testing.

As detailed above, PG&E is undertaking its MAOP validation process, through which, among other things, PG&E has identified strength test documentation related to transmission pipelines in HCAs, including in San Francisco. PG&E's reports can be viewed on the CPUC website at <http://www.cpuc.ca.gov/PUC/events/sanbruno.htm>. PG&E also has made available on its website maps showing the gas transmission lines, by location, for which strength test documentation has been identified (See Map 26 <http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.) Subsequent work will focus on the validation of MAOP based on engineering analysis, not only of the mainline pipe in PG&E's entire transmission system but also of each component, such as valves, sleeves, bends, fittings, etc.

12. Records of all maintenance activities.

PG&E performs regular inspection and maintenance on all its gas transmission pipelines, including Lines 101, 109 and 132 in San Francisco. Among other types of activities, PG&E performs regular leak surveys, initiating repairs where indicated, and inspects and maintains pipeline equipment and fixtures, such as regulating, monitoring and cathodic protection equipment. PG&E also has performed substantial inspection and maintenance on these transmission lines during the assessment process pursuant to PG&E's integrity management program. Providing records for or describing in a written response every maintenance activity that has occurred on Lines 101, 109 and 132 in the San Francisco area is not a task that can be reasonably accomplished.

13. Is maintenance or replacement scheduled for any of the transmission pipelines or pipeline segments in San Francisco under current maintenance schedules? If so, for which pipelines and/or segments and when?

As noted in response to Question No. 12, PG&E performs regular maintenance on Lines 101, 109 and 132 in San Francisco and will continue to do so. As stated in response to Question No. 10, Line 101 is next scheduled to undergo an integrity management assessment in 2015, and Lines 109 and 132 are scheduled for an integrity management assessment in 2016. The transmission pipelines in and around San Francisco are currently being reviewed as part of PG&E's Pipeline 2020 program to determine whether particular pipelines or pipeline segments should be replaced or modernized. In connection with its MAOP validation project, PG&E plans to perform strength tests and, in some instances, replace pipe on 152 miles of transmission pipeline in 2011. In San Francisco, PG&E plans to hydrotest the section of Line 132 from Geneva Avenue to the San Francisco Gas Load Center, which is near 23<sup>rd</sup> Street and Illinois Street. (See Map 26 at <http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index.shtml>.)

14. All incident reports submitted to the CPUC on the Pipeline and Hazardous Materials Safety Administration's (PHMSA) form F7100.2 in the past ten years.

Please see the enclosed Incident Report, dated November 11, 2009, which relates to a third-party dig in on Line 101.

15. All correspondence or records related to or accompanying any incident reports submitted to the CPUC on PHMSA form F7100.2 in the past ten years.

Please see the enclosed letter, dated December 11, 2009, from PG&E to the CPUC in connection with the F7100.2 report identified in the response to Question No. 14.

16. All quarterly summary reports submitted pursuant to CPUC General Order ("GO") 112-E § 122.2(d) in the past ten years.

Please see the enclosed Quarterly Gas Incident Report.

17. All safety-related reports submitted pursuant to CPUC GO 112-E § 124.1 in the past ten years.

PG&E has not submitted any safety-related condition reports to the CPUC or the Department of Transportation (DOT) related to events associated with Lines 101, 109 and 132 in San Francisco in the past ten years.

18. All installation reports submitted pursuant to CPUC GO 112.E § 125.1 in the past ten years.

PG&E has not submitted any installation reports to the CPUC related to Lines 101, 109 and 132 in San Francisco in the past ten years.

19. All reports seeking to change the Maximum Allowable Operating Pressure submitted pursuant to CPUC GO 112-E § 126.1 in the past ten years.

PG&E has not submitted any requests for pipeline up-rates to MAOP to the CPUC related to Lines 101, 109 and 132 in San Francisco in the past ten years.

20. PG&E's announced "Pipeline 2020" program has proposed installation of automatic and/or remotely operated gas shutoff valves. Please provide more detail about the location and type of these proposed valves that relate to the transmission lines within San Francisco.

In its Pipeline 2020 program, among other things PG&E has committed to evaluate and install remotely controlled and/or automatic valves where appropriate on its transmission lines. In addition to that program, PG&E is currently planning to install remotely controlled ball valves in San Francisco at the San Francisco Gas Load Center, near the intersection of 23rd Street and Illinois Street (Lines 101, 109 and 132), and near the intersection of Cayuga Avenue and Still Street (Line 109).<sup>1</sup> PG&E also plans to install

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<sup>1</sup> The installation at the San Francisco Gas Load Center is an early initial phase project planned for implementation this year. The installation of the remote controlled valve near Cayuga Avenue and Still Street is dependent on the actual ability to automate a valve at that location.

remote control valves near the intersection of Bayshore Blvd. and Geneva Avenue (Lines 101 and 132B), which is just south of the San Francisco city limits. Existing remote control valves are located at Martin Station, near the intersection of Geneva Avenue and Schwerin Street (Line 132) and at Sullivan Station on Sullivan Avenue (Line 109).

*Questions 21 through 23. The March 15, 2011 Report of Pacific Gas and Electric Company on Records and Maximum Allowable Operating Pressure Validation has raised the following questions:*

21. For each segment of transmission pipeline in high consequence areas in SF for which PG&E was able to locate pressure test records and/or Section 619(c) documentation please specify whether PG&E was able to locate pressure test records or Section 619(e) documentation, or both.

PG&E is in the process of validating the MAOP documentation for all 5700 miles of its transmission pipelines. The documentation for the majority of the 1805 miles located in HCAs has been collected and reviewed. On March 15 and 21, 2011, PG&E provided to the CPUC detailed reports regarding the MAOP validation process, which can be viewed at <http://www.cpuc.ca.gov/PUC/events/sanbruno.htm>. In addition, PG&E has uploaded maps to its website that show the pipelines for which strength test and/or historical operating pressure documentation have been identified. (See [http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index\\_shtm!](http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index_shtm!).) A segment by segment compilation of information as described in the request is not yet complete.

22. Please identify each segment of transmission pipeline in high consequence areas in SF for which PG&E was unable to locate pressure test records and/or Section 619(c) documentation.

As discussed above, PG&E is continuing its MAOP validation process, through which, among other things, PG&E has identified strength test and historical operating pressure documentation related to transmission pipelines in HCAs, including in San Francisco. That process also has identified those pipelines for which such documentation has not been located. PG&E's reports detailing this work can be viewed on the CPUC website at <http://www.cpuc.ca.gov/PUC/events/sanbruno.htm>. PG&E also has made available on its website maps showing the gas transmission lines, by location, for which strength test and/or historical operating pressure documentation has been identified. These maps also show the pipeline locations where such documentation has not been identified. (See Map 26 at [http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index\\_shtm!](http://www.pge.com/myhome/edusafety/systemworks/gas/latestupdates/filingmaps/index_shtm!).) A segment by segment compilation of information as described in the request is not yet complete.

23. The Report states that PG&E plans to hydro-test or replace pipeline on Lines 101, 109 and 132. Are any segments of these pipelines that PG&E plans to test or replace located in San Francisco?

As stated in PG&E's March 15<sup>th</sup> and March 21<sup>st</sup> reports, PG&E committed to strength test and/or replace approximately 152 miles of gas transmission pipeline in 2011. In San Francisco, PG&E plans to hydrotest the section of Line 132 from Geneva Avenue to the

San Francisco Gas Load Center, which is near 23<sup>rd</sup> Street and Illinois Street. The specific segments to be tested and the dates for that testing are being finalized.

24. Please describe the date, location and duration of any scheduled pressure increases on the San Francisco transmission lines during the 10 years prior to the date of this request, as well as the increased pressure reached, the Normal Operating Pressure, the Maximum Operating Pressure, and the Maximum Allowable Operating Pressure for the locations on the date of the planned pressure increase. Please also explain the purpose of each scheduled pressure increase, and describe any tests or inspections that were conducted on the lines subsequent to the planned increase in pressure.

PG&E's practice of operating pipelines at the pressure needed to meet peak customer demand every five years has been limited to certain of its pipelines and has not been a system-wide practice. The pressure needed to meet peak customer demand is typically but not always equal to a pipeline's MAOP.

PG&E usually operates its pipelines at the pressure needed to serve customers, which generally is not the maximum pressure for which the lines are authorized by code. When there is particularly cold weather and demand for gas increases to peak levels, the pressure on the line can be increased to the maximum previously established pursuant to the DOT code. However, under certain circumstances where the operating pressure is raised above the maximum pressure experienced during the preceding five years, PHMSA regulations adopted in 2002 require the operator to schedule a priority assessment capable of assessing seam integrity. In these circumstances, ASME B31.8S calls for a hydrostatic pressure test, which would take a line out of service for a period of at least a week. To avoid this and any potential customer curtailments that may result, PG&E has operated, within the applicable 5-year period, some of its pipelines that would be difficult to take out of service at the maximum pressure experienced during the preceding 5-year period in order to meet peak demand and preserve the line's operational flexibility. These pressures are within generous safety margins built into a pipeline's MAOP.

Please see the following table:

<b>Date of Pressure Exercise</b>	<b>Route</b>
4/12/2010	109
12/9/2008	132
11/14/2008	109
12/11/2003	132
12/11/2003	109
12/11/2003	101

Please also see the enclosed SCADA pressure information related to the data in the table.

Questions 25 through 29: *In 1995, the CPUC sought and obtained from the U.S.D.O.T. Office of Pipeline Safety a waiver of certain provisions of 49 C.F.R. section 192.150(a) to permit PG&E to install Paltem pipe lining in 11,400 feet of Line 109 (26" steel) along Alemany Blvd. in San Francisco, despite the fact that the lining would preclude inspection by metal-to-metal inspection device (commonly referred to as a "pig"). The CPUC stated then that PG&E would install monitoring points on the pipe to detect any leaks or defects in the lining, and that at the end of the first year of operations, PG&E would shut down Line 109 and video its entire length to determine the liner's condition. We request that PG&E provide documentation of that pipe lining project, as well as any inspection reports pertaining to the efficacy and condition of the Paltem pipe lining, including without limitation:*

25. Results of the video camera inspections before and after the installation of the Paltem lining.

Please see the enclosed Report No 413.63-95.6 on the video inspection that was conducted prior to and after the installation of the Paltem lining.

As that report makes clear, after installation, the Paltem lining was functioning properly as a safe composite lining, providing additional support and protection to these segments of Line 109. In addition, throughout the first year of operation, PG&E continuously monitored the lining at pre-installed monitoring points on the pipeline to detect any leaks or defects. No leaks or defects were detected during these assessments.

Based on the post-installation testing, however, PG&E determined that a subsequent in-line video inspection could potentially compromise the integrity of the Paltem lining. In order to conduct such an inspection, the pipeline must first be isolated and depressurized. Because the lining is designed to be permeable, any such depressurization had the potential to cause portions of the lining to "blister" and thus potentially compromise the lining. Therefore, it was decided to focus on a year-long observation of the pre-installed monitoring points to ensure the lining was functioning properly.

In 1991, Line 109 was evaluated for seismic risk. As part of that evaluation, the seismic hazard for this particular segment was classified as "very low." The existing transmission pipelines in and around San Francisco are being reviewed as part of PG&E's Pipeline 2020 program to determine whether particular pipelines or pipeline segments should be replaced or modernized.

26. Details and results of any hydrostatic testing of Line 109 prior to installation of the Paltem lining.

Prior to the installation of the Paltem lining, PG&E conducted a hydrostatic pressure test of the existing pipeline to a minimum of 485 psig. The newly installed pipe at the tie-in and liner insertion locations were also subjected to a hydrostatic pressure test. As a result of this testing, two corrosion leaks were detected and repaired by replacing the affected piping.



27. Data obtained from installation of monitoring points on the pipe to detect leaks or defects in the Paltem lining.

Vent locations were installed at both ends of each lined section. These allow the backside of the liner to be vented down if the transmission line must be taken out of service. After installation gas permeation rates through the liner were monitored to verify the integrity of the liner. The steel pipe is the primary gas barrier and is monitored for leakage annually.

28. Implementation of an inspection program and the results of that inspection program with respect to the integrity of the Paltem lining.

Please see the response to Question Nos. 25 and 27, above.

29. Results of the CPUC's monitoring of this pipeline and the portion of Line 109 in which the Paltem lining was installed.

PG&E is not aware that there are "results" of the CPUC's monitoring, other than the fact that Line 109 has been safely operated since 1995.

30. In addition to the records relating to the 1995 request for waiver as to Line 109, we request records relating to any other requests for waivers from the safety/integrity management provisions of state or federal law that PG&E has sought, or that the CPUC has sought on PG&E's behalf, with respect to any transmission pipeline located within the geographical boundaries of the City and County of San Francisco.

PG&E has not submitted to the CPUC any other requests for waivers from safety or integrity management provisions related to Lines 101, 109 and 132 in San Francisco in the past ten years.

31. As part of the CPUC's Resolution L-403, the CPUC ordered PG&E to perform an accelerated system survey of all natural gas transmission pipelines. On February 1, 2011, PG&E provided the CPUC with its report. In that report, PG&E states that in October 2010 it found three leaks in close proximity to Line 109. PG&E represents that the leaks were repaired by tightening the cap on a fitting, applying grease to a 16 inch valve, and tightening the plug on a 1/2 inch valve. Please provide any documents related to this recent repair of Line 109, including but not limited to how the method of repair was chosen.

Please see the enclosed "A Forms" related to the leak repairs identified in Question No. 31.

32. We understand that the gas transmission pipelines running through San Francisco were installed prior to 1970. The materials and condition of these pipelines therefore do not reflect the most up-to-date standards for materials and structural integrity. Has PG&E developed a position on the relative safety of welded pipes manufactured prior to 1970? If so, please describe PG&E's position and provide any documents that describe or explain the position.

PG&E operates a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system and has upgraded this program over the years, proactively and in response to new state and federal regulations. PG&E has instituted a number of additional measures following the San Bruno tragedy, including a comprehensive leak survey of the transmission lines to supplement our regularly scheduled leak surveys, a review of appropriate valve technology, and a significant improvement in our information sharing with local governments and first responders. Whenever PG&E identifies a threat to public safety, whether because of a customer's report or its own ongoing assessments, we act immediately. We do not delay or defer work that is necessary to maintain public safety.

Like other transmission pipeline operators, and based on federal regulations, PG&E does not automatically identify or assess the same level of risk to each segment of pipe within its system manufactured prior to 1970. Instead, pursuant to the federal regulations for pipeline integrity management (49 CFR 192, Subpart O), PG&E identifies certain time dependent threats, assesses the risk from those threats, and then takes action to address those threats where needed. The regulations identify 4 categories of threats: (1) time independent threats, such as third party damage or outside force damage; (2) time dependent threats, such as internal corrosion, external corrosion and stress corrosion cracking; (3) static or resident threats, such as fabrication or construction defects; and (4) human error. The primary factors associated with the age of a pipeline are the time dependent and resident threats. On such pipelines, as with the rest of its transmission pipeline system, PG&E adheres to state and federal safety regulations pertaining to the frequency and method of pipeline inspections and assessments, among other requirements.

In addition, PG&E is undertaking a major effort to strengthen its natural gas transmission system and advance industry best practices over the coming decade with its Pipeline 2020 program. In consultation with state regulators and industry experts, PG&E's initiative will involve the accelerated modernization of gas transmission pipelines and valves, as well as support for research and development, advancement of industry best practices, and tighter coordination with public agencies and first responders. The Pipeline 2020 program is a natural but major evolution of PG&E's existing programs, made an urgent priority by the San Bruno tragedy.