

SAN BRUNO APPROVED Q&A

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About the Pipeline in Question

1. Is 132 the pipeline that ruptured?

Yes.

2. Where exactly did the rupture occur?

Mile marker 39.28.

3. How long is the pipeline?

Line 132 is 51.5 miles long.

4. Where does (the line) go?

Line 132 begins in the City of Milpitas (near the intersection of Hwy 237 and I-880) and ends in San Francisco at 23rd St and Illinois St.

5. Is it buried underground, above ground or in a tunnel?

The pipeline is buried underground.

6. Is a 30" steel line typical for gas transmission?

Yes. PG&E gas transmission pipelines range in diameter from 4" to 42"

7. What is the age of the ruptured pipe?

The section of transmission Line 132 where the accident occurred was installed in 1956.

8. How old is the pipeline itself, was it all installed in 1956?

The original line was built in 1948. The section in San Bruno was built in 1956 to accommodate housing development.

9. Have we mapped Line 132 to identify low spots, etc.?

We map and monitor all of our gas pipelines.

10. When did the pipe last have maintenance performed?

A corrosion check was performed in November 2009. A routine inspection was also performed in March 2010. Helicopter patrols were performed in March and June 2010.

11. Is it typical to have such a large gas pipeline going through a residential neighborhood?

It is not unusual for homes to be built in an area subsequent to a pipeline installation. In this case the pipeline was installed in 1956.

12. Is it possible for a SmartMeter to cause an explosion in a gas transmission pipeline, such as occurred in San Bruno?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter. However, it was reported on 9/16/2010 that the NTSB does not believe SmartMeters contributed to the San Bruno accident.

13. A PG&E officer said the maximum operating pressure of the pipe was 400 psig. You are saying the MOP is 375 psig. Why the difference?

The Maximum Allowable Operating Pressure (MAOP) of Line 132 is 400 psig. However, it is connected to other pipelines with lower MAOP than Line 132, so we have to rate the Maximum Operating Pressure (MOP) of the line at the lowest MAOP of any line connected to it, which is 375 psig.

14. What is the current Maximum Operating Pressure (MOP) on line 132 that was involved in the San Bruno accident?

The operating pressure of any pipeline varies. Line 132 had a Maximum Operating Pressure (MOP) of 375 psig (pounds per square inch gauge) prior to the accident. Immediately after the accident, PG&E reduced the Operating Pressure by 10 percent to 337 psig. The Operating Pressure was reduced again on 9-17 by another 10 percent to 300 psig.

15. What type of external corrosion coating was originally used on the transmission pipe in San Bruno?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

16. Who manufactured the pipe?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

17. Has PG&E observed any statistical relationship between the age of pipes in its system and the likelihood of a leak or failure?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

18. Did PG&E crews install the pipeline or did a contractor?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

19. Was this made of mild steel? If not, can you describe the pipe's metal alloy composition?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

20. Did this pipe have a rated burst strength? What was it?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

21. Can you describe the safety margin between the maximum operating pressure and the burst pressure rating/or the yield strength? Please explain.

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

22. Was the pipe heat treated after the longitudinal weld was made when originally manufactured?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

23. Were the longitudinal welds facing up when it was installed? Were the longitudinal welds aligned or offset on successive segments?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

24. Was there a single longitudinal weld in the pipe sections that failed or more than one? While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

25. The topography in this area has a dip and we understand that contour was accommodated with short sections welded together. Do you know how many girth welds were used within 100 feet of the point of failure of the line?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

26. What type of welding was used on the girth welds?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

27. I understand that PG&E has said the pressure in the pipe was 375 psi and the maximum operating pressure rating was 400 psi. I'm told by metallurgists that pipeline pressures are seldom constant, but can cycle by as much as 20 to 40 psi in normal use, because of compressor operation. Is that correct?

As a general statement, pipeline compressor operation is a factor that can contribute to variations in pressure in pipeline operation. However, not all pipelines are served from a compressor and not all pipelines are subject to such pressure fluctuations.

28. Can that cycling cause metal fatigue over a half century of use?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

29. Had PG&E observed any internal or external corrosion on the failed pipe segment?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

30. Engineering experts at UC Berkeley say the fracture surfaces of the pipe show a lack of tensile necking, indicating embrittlement and weakening. Do you have any comment? While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

31. Did PG&E ever see evidence before the accident that hydrogen sulfide gas or other contaminants, such as water, were in the pipe?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

32. What specification did PG&E have for hydrogen sulfide gas in the line and how did PG&E monitor or enforce that?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

33. The pipe ruptured at a low point in the street. What steps did PG&E take to insure that water or other contaminants did not accumulate internally in this dip?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

34. Did PG&E have a drip system to collect water or other contaminants upstream of the point where the accident occurred?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

35. Was that drip regularly cleaned out?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

36. Does the starting point of the pipe in Milpitas connect to a pipeline company other than PG&E? Who?

No, all pipelines that enter and exit Milpitas Terminal are owned by PG&E.

37. Does the termination point of the pipe in San Francisco feed a PG&E distribution network or some other network?

Yes, the termination point of the 3 transmission pipelines to San Francisco serves several distribution networks in the City and County of San Francisco.

38. Do you know what region of the country or continent does the gas transported in that pipe originate from?

The gas in the subject pipeline is transported from one of or a combination of four sources; Western Canada, the Southwestern US, the Rocky Mountains as well as within California.

39. Was there ever any evidence prior to the accident of hydrocarbon fed bacteria in the soil around the pipe?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

40. Did PG&E ever raise concerns with the city of San Bruno that sewage known to be leaking in the area of the gas line could contribute to corrosive conditions?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

41. Could we please obtain a copy of PG&E's Internal Corrosion Direct Assessment plan?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

42. Did PG&E excavate around the gas line to inspect after the 2007 and 2008 sewer bursting work done by the city? If not, what inspection method was used?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

43. What was the vertical separation between the sewage line and the gas line where they crossed?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

44. Is there a water pipe that cross or parallels the gas line near the accident site? How close is that water pipe?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

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2011 Gas Transmission & Storage Rate Case Document

45. We have a document that says you deemed this 2.9 mile segment of the pipeline north of the accident to be at an unacceptably high risk. Why didn't you fix it immediately?

The document says that our long range planning tool deems the pipeline segment's relative risk to be too high if the pipeline is not replaced as scheduled, in 2013, and if the risk factors leading to the projection have not changed substantially. We do not delay or defer work that is necessary for public safety. Any issue identified as a threat to public safety is always addressed right away. The document you refer to is based on one of our planning tools, not a tool designed to address or be used for immediate safety concerns.

46. Is this the line that exploded?

Line 132 ruptured in San Bruno. However, the segment of the line identified in the filing is not the segment that ruptured.

47. Where is the segment located?

It is located 2.8 miles north of the San Bruno accident in South San Francisco.

48. Has it been checked again?

The segment was checked for leaks on September 10 and no leaks were found.

49. Your filing says “the risk of failure at this location is unacceptably high.” If that’s true, why are you waiting until 2012 to replace it?

PG&E is committed to performing the work necessary to assure the safety of its gas transmission system. Accordingly, PG&E is constantly prioritizing its projects using the most recent up to date information available.

In this particular case, PG&E identified this line section in 2006 as being a project for 2009 its workpapers for the 2008 gas transmission rate case, and sought five million dollars to fund the work. In early 2008, the pipeline engineer responsible for this area reanalyzed all available information on this segment. The information he reviewed included all of the data from the External Corrosion Direct Assessment (ECDA) conducted on segments of Line 132. In addition to reviewing the available data, the responsible engineer personally conducted a field investigation of the segment. This involved driving the entire section, observing that a portion of it was contained within a well-marked right of way and a

portion under a public cul-de-sac. After this, in consultation with other pipeline integrity engineers, the responsible pipeline engineer determined that third party dig-in risk did not warrant immediate replacement of the segment (a third-party dig had caused a leak at MP 43 in November 2001) and the segment had not experienced any leaks due to corrosion. Based upon his review of information from the prior ECDA, his own observations, and his engineering judgment, and knowing that PG&E was going to be performing another ECDA later that year or the next year, he determined that the work did not need to be done as previously scheduled.

The 2006 work paper forecast \$5 million for the replacement of this segment of Line 132. When pipeline projects were reprioritized, that forecast money was spent on other priority projects instead. In fact, in 2008 and 2009, PG&E spent a total of \$380 million on gas transmission capital projects, \$12 million more than forecast.

The “unacceptably high risk” referred to is if it is not replaced in 2013 in accordance with our projection, and if the risk factors leading to the projection have not changed substantially.

50. What method do we use to internally inspect and clear Line 132?

There are three federally approved methods to complete a transmission pipeline integrity management assessment, In-Line Inspection, Pressure Testing and External Corrosion Direct Assessment (ECDA). To date, PG&E has used In-Line Inspection and External Corrosion Direct Assessment (ECDA) techniques as appropriate on L132. PG&E performed assessments on L132 in both 2004 and in 2009; the primary method of assessment was ECDA.

51. Was Line 132 hydro-tested?

No

52. When was Line 132 last internally inspected?

Internal Corrosion Direct Assessment has also been performed on L132 at a location near San Bruno Mountain and at another location near Milpitas. No internal corrosion was found.

53. What method was used?

The pipe was cut and in-line inspection tools were used to assess the condition of the pipeline. No internal corrosion was found.

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Auto-Shut Off Valve

54. Do we have emergency equipment that allows automatic shutdown of pipes? For example, check valves, overpressure relief valves, etc.?

PG&E has hundreds of automatic over pressure protection control valves that protect pipelines from exceeding their maximum operating pressure. PG&E also has some lines

with rupture control valves for specific needs and the 24 hour control center has the ability to shut down some pipeline systems via remote control.

55. What is the difference between manual valves, automatic valves and remote controlled valves?

Manual valves can only be operated by a trained, federally-qualified individual at the valve location. Automatic valves are fully automated valves that will operate without human intervention when specific operating conditions on the pipeline arise. Remote-controlled valves can be remotely operated from a control center. It is possible to have automated, remote-controlled valves.

56. How is a valve turned off? What is the process?

The process is different for each type of valve: remotely controlled, automatic, manual.

- Remotely controlled valves: these are valves operated by remote control from our 24-hour manned Gas Control Center
- Automatic valves: these are valves with control programs triggered to operate via a specified change in pipeline conditions and do not require remote control or personnel on site
- Manual valves: these are valves hand-operated by wheel and gear assembly or by wrench with an indicator to show whether it is open or closed

57. Was there an automatic shut off valve near the site of the accident?

There is no automatic shut off valve near the site of the recent San Bruno accident.

58. Was there an automatic shutoff on this segment?

No.

59. Should there have been an automatic shut off valve in a highly populated area?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

60. Do we have any plans of going to automatic detection on our lines? Is that even possible?

The PG&E gas system is monitored by our Gas Control Center on a 24 hour, 7 day a week basis to detect and respond to abnormal operating conditions. PG&E is examining the use of different kinds of technologies on its pipelines.

61. How far apart are they typically spaced?

The spacing of shut-off valves on transmission pipelines varies according to population density. In accordance with federal regulations, PG&E has shut-off valves no more than twenty miles apart in rural areas on transmission lines, and has shut-off valves no more than five miles apart in densely populated urban areas. In general PG&E has more shut off valves than required by federal regulations.

62. How many are manual and how many are automatic on line 132?

On Line 132 there are twenty manual valves. PG&E has remotely operated valves in the terminal stations that feed Line 132.

63. What determines whether a valve is manual or automatic?

It depends upon safety regulations and operational needs. Prior to installing or replacing a valve, we consider a variety of factors, such as the design of the pipeline system in which it is to be installed, pipeline safety code requirements and the type of control required or desired from the valve installation. A great majority of the valves on PG&E's gas transmission system are manual valves because automation is not required and not necessary for the operating characteristics of the pipeline system.

64. Is it expensive and or difficult to replace a manual valve with an automatic one?

The cost to replace a manual valve operator on a transmission system with an automatic valve operator (called a valve actuator) and the controls that are required to operate the actuator will vary depending on the specific conditions at the installation location, with an estimated average cost of \$500,000 and a range of \$150,000 to \$1 million for a 24-inch valve on the San Francisco peninsula. It is possible to replace the valve controls and/or the valves, but the projects can be complicated and each one would take from six to twenty-four months depending upon the complexity of the project.

65. Is the company replacing manual valves with automatic ones?

PG&E does replace manual valves with automatic valves when appropriate for operational purposes, but it is not common and there is no program to replace manual valves with automatic valves. The change to an automatic valve would be driven by changing operating conditions or a change in the pipeline system in which the valve is installed. Our valve installations and control systems designs are consistent with industry practice and federal regulations.

66. If so, can you provide any information on the status of that process?

Not applicable.

67. Where are the valves located that were turned off on Thursday night?

The valves on the transmission pipeline were located at mile point numbers 40.05 and 38.49, approximately 3/4 mile upstream and downstream of the accident location. The shut off valves on this line are 1.5 miles apart and the rupture location was approximately in the middle of the two valves.

68. San Bruno Fire says workers also had to turn off distribution line valves. How many needed to be turned off? How long did that take?

The smaller, lower-pressure distribution lines that make up the neighborhood's local supply system were isolated by closing 3 valves and squeezing the pipe closed (an approved method of shutting plastic distribution pipe) in two other locations. As for the timing of the closure, due to the NTSB investigation we are not permitted to discuss the specific timing of the valve closures and pipe squeezes.

69. Are we retrofitting older pipes for shut off valves for transmission lines?

PG&E is evaluating its existing system design and will report the results of that evaluation back to the CPUC as directed in their September 13, 2010 letter.

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Pipeline Replacement Program

70. Describe the pipeline replacement program.

The GPRP (Gas Pipeline Replacement Project) is a multi-year project to upgrade our gas distribution facilities. This program also included gas transmission facilities in the early phases of the program. Since the inception of the GPRP through the end of 2009, PG&E has replaced over 2100 miles of pipeline system-wide, and has spent approximately \$1.5 billion.

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Impact of Accident

71. How many gas customers lost service as a result of this accident?

Approximately 300.

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General Safety

72. Can this kind of accident happen again?

We will be working with local, state and federal agencies to determine the cause of the event and taking appropriate actions based on the findings of those investigations.

73. What are “suspect leak trends”?

“Suspect leak trends” is an internal phrase used to describe our methodology for assessing leak data. It is not related to actual leaks being suspected. We look at historical leak averages for each division and if there are changing trends, we focus our assessment there first. Ultimately, we look at the whole system.

74. Why aren’t you providing more details about your gas system and safety practices?

PG&E has provided and continues to provide a substantial amount of detailed information about its gas system and safety practices. However, as a result of the NTSB investigation we are not permitted to discuss certain details related to this matter.

75. Isn't that area one where there are typically landslides and other natural earth movement, and was that taken into account when the pipeline was first sited there?

PG&E's gas transmission and distribution system is generally engineered and designed considering soil conditions and potential earth movements.

76. Are there any seismic concerns or issues with this particular location? Any faults, slippage, landslide concerns? Has PG&E done geological studies and risk assessments of this area for pipelines?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter. PG&E's geosciences department continuously studies our service territory for seismic activity.

77. Does PG&E have a seismic GIS layer that is used as a basis for categorizing pipes as having the "potential for ground movement?"

PG&E does have ground movement information in GIS and that information is used to determine if there is a "potential for ground movement".

78. Is there a document available that explains our pipeline maintenance schedule?

There is no one document that explains all of the maintenance PG&E performs on our transmission and distribution pipelines, although federal and state regulations establish minimum maintenance tasks and schedules for pipeline operators. PG&E standards further specify maintenance tasks and schedules, establishing the framework for a comprehensive pipeline safety program.

These codes specify design, construction, maintenance and operation requirements for natural gas pipelines such as:

- PG&E provides immediate 24 hour response to gas odor calls
- All gas pipelines are leak surveyed at regular intervals
- PG&E conducts periodic patrols of our pipelines
- Pipeline assessments are conducted periodically on critical pipelines
- Pipelines are cathodically protected to prevent external corrosion
- PG&E strongly supports Underground Service Alert, #811, the one call system used to locate underground pipelines and facilities before excavation by others
- PG&E personnel stand by when known excavation is occurring in close proximity to pipelines
- PG&E's pipeline system is continuously monitored on a 24 hour basis
- Gas is odorized to allow easy leak detection by the public

79. Have you surveyed the transmission lines in San Bruno?

Two days after the accident in San Bruno, we began surveying the three transmission lines that feed the San Francisco Peninsula. As an added safety measure, we have also reduced the operating pressure by 20 percent on these three lines. The leak surveys were completed on September 10.

80. What designates a “high risk” pipeline? What does PG&E need to do to address these pipelines?

PG&E does not operate “high risk” pipelines. We operate our pipeline system with an appropriate margin of safety and a constant monitoring program. PG&E does operate pipelines which run through populated areas, and some are designated as “High Consequence Areas” (HCAs) by federal regulation.

HCAs are areas of higher population density with 20 or more dwellings, public gathering places or structures difficult to evacuate, such as nursing homes, hospitals, day cares, etc.). Being in a High Consequence Area does NOT mean that the transmission pipeline is less safe, or creates greater risk, or that there is a higher likelihood of failure. What it means is that more people are in close proximity to the line.

If this is a reference to PG&E’s internal “Top 100” list, this is a list of gas transmission pipeline segments that have been identified for engineering analysis and future work as part of PG&E’s ongoing preventive maintenance process. This dynamic list is regularly updated as work is completed and new items are added. As part of this analysis we take into account (among other things) population density and environmental impact. As with an HCA designation, being on the list for future work does not mean the pipeline is unsafe or that there is a high likelihood of failure.

81. What is the schedule of replacement for older pipes?

PG&E’s transmission pipelines are now included in the transmission pipeline integrity management program, not the Gas Pipeline Replacement Program (GPRP). PG&E’s transmission pipeline replacement decisions are based on a variety of pipeline factors beyond just age, including, among other things, pipe material and design, soil resistivity, pipe coating, pressure, potential for third-party damage, seismicity or the potential for ground movement, water crossings and number of customers served.

82. If a new segment is added today, how do the standards differ from earlier methods used to install the transmission system through San Jose?

PG&E installs new pipe segments in accordance with Federal and State codes, and PG&E design standards. These codes and standards, along with national industry standards, are routinely reviewed and improved to assure the highest quality pipeline construction standards. PG&E revises its standards as new regulatory requirements are initiated.

Further, PG&E continually assesses the integrity of its transmission system and inspects the system in accordance with Federal code and PG&E procedures, which are designed to address pipe segments installed today as well as segments installed in earlier decades.

83. What did PG&E do with funds allocated for GPRP work but not fully spent from the early 1990s through 2007? Why did it not spend all of the money allocated for GPRP?

The GPRP (Gas Pipeline Replacement Project) is a multi-year project to upgrade our gas distribution facilities. Since the inception of the GPRP through the end of 2009, PG&E has

replaced over 2100 miles of pipeline system-wide, and has spent approximately \$1.5 billion. These costs are recovered in our General Rate Case (GRC).

Our GRC filings are prepared years in advance and are based on projected costs in future years and are not a line-item budget. The CPUC understands future costs cannot be calculated exactly and allows utilities to reallocate funds as necessary for higher priority projects.

PG&E constantly monitors its system and makes any necessary repairs or investments. Since 2007, the CPUC required PG&E to explain why allocated funds were not spent as specifically authorized on GPRP. As PG&E explained to the CPUC in its current GRC, during the last three years, PG&E identified higher priority gas distribution capital projects that it included within the scope of the GPRP. As a consequence, PG&E actually spent more on this program than it received funding for.

PG&E's transmission pipelines are in the transmission pipeline integrity management program, not the GPRP. Funding for gas transmission pipeline replacements is through the Gas Transmission rate cases, not the General Rate Case. PG&E's transmission pipeline replacement decisions are based on a variety of pipeline factors, including, among other things, pipe material and design, soil resistivity, pipe coating, pressure, potential for third-party damage, seismicity or the potential for ground movement, water crossings and number of customers served.

84. Can I see copies of safety inspection reports for the past 5 years on the following: PG&E's two parallel lines Nos. 34 running through the western edge of Bakersfield, the lines No. 10 and No. 6 running through the heart of Bakersfield?

PG&E makes copies of its extensive inspection, maintenance and operations records available to the California Public Utilities Commission and other governmental agencies but for security reasons does not publicly release copies of those records. However, PG&E provides an overview of its inspection, maintenance and operations practices in response to your question below.

85. Can I see reports on what portions of any of these lines have been replaced or upgraded from 1989 to present?

Since 2005, PG&E has completed eight transmission pipeline projects in the greater Bakersfield area to accommodate population growth in the area and is in the process of completing two additional projects. All pipelines within the PG&E system, including Kern County and the city of Bakersfield, are in compliance with Part 192 of the Code of Federal Regulations (CFR). Many currently exceed the minimum guidelines. PG&E's transmission pipelines are assessed as part of its transmission pipeline integrity management program and are leak surveyed on at least an annual basis.

86. If copies can't be obtained quickly, could you let me know verbally what safety inspections have been done and the results?

PG&E follows maintenance and operations practices required by Part 192 of the Code of Federal Regulations (CFR) and California Public Utilities Commission General Order 112-

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E. In addition to these regulatory requirements, PG&E has its own operating and maintenance standards to ensure compliance with the regulations. PG&E routinely conducts leak surveys of all our natural gas transmission and distribution lines. In 2008, we accelerated the distribution leak survey program to complete it in three years instead of the usual maximum five.

PG&E's transmission pipeline replacement decisions are based on a variety of pipeline factors, including, among other things, pipe material and design, soil resistivity, pipe coating, pressure, potential for third-party damage, seismicity or the potential for ground movement, water crossings and number of customers served.

There are three federally approved methods to complete a transmission pipeline integrity management baseline assessment: In-Line Inspections, Pressure Testing and External Corrosion Direct Assessment (ECDA).

In-line inspection involves a tool (commonly known as a "pig") inserted into the pipeline, which identifies areas of concern such as potential metal loss (corrosion) or geometric abnormalities in the pipeline. Excavations are performed in areas of concern as required by federal regulations.

External Corrosion Direct Assessment is a four step process:

- Preassessment: provides guidance for selection of the pipeline segment and which indirect methods to be used.
- Indirect Examination: indirect above-ground electrical surveys are performed to detect coating defects and the level of cathodic protection.
- Direct Examination: Based on the indirect examination, points of potential interest are excavated to expose the pipe surface for metal loss measurements, and estimated corrosion growth rates.
- Post Assessment and Continuing Evaluation: sets re-inspection intervals, provides a validation check, and provides performance measures

Pressure testing involves filling the pipeline with a test medium (i.e. water, gas, air) and testing to a certain pressure for specified duration.

87. Have any portions of those lines have been replaced in the last 20 years as the community has grown past those lines?

Since 2005, PG&E has completed eight transmission pipeline projects in the greater Bakersfield area to accommodate population growth in the area and is in the process of completing two additional projects. All pipelines within the PG&E system, including Kern County and the city of Bakersfield, are in compliance with Part 192 of the Code of Federal Regulations (CFR). Many currently exceed the minimum guidelines. PG&E's transmission pipelines are assessed as part of its transmission pipeline integrity management program and are leak surveyed on at least an annual basis.

88. What is the recommended easement for natural gas lines and how is that easement applied?

For its gas transmission pipelines, PG&E will typically seek a 50 foot wide right-of-way easement, but has historically placed transmission lines in rights-of-way as wide as 100 feet and as narrow as 30 feet. PG&E attempts to place the gas line in the centerline of the right-of-way, but may need to deviate from the centerline due to construction conditions and topographical features.

89. Can a house be built directly on top of a gas transmission line?

All of PG&E's transmission pipelines are located within right-of-way owned by PG&E or in right-of-way owned by governmental entities. PG&E's right-of-ways vary in width from 30 feet to 500 feet. PG&E has the legal right to prevent the construction of buildings within its right-of-ways. The governmental right-of-ways in which PG&E's transmission pipelines are located also preclude the construction of buildings. PG&E regularly patrols its transmission pipelines. If construction of a building is found to be taking place within PG&E's right-of-way or within the governmental right-of-way in which the transmission pipeline is located, steps are taken to stop the construction.

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Top 100

90. What is the Top 100 list?

PG&E has a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E monitors system status on a 24-hour basis, and regularly conducts leak inspections, surveys, and patrols of all of our natural gas transmission pipelines. Any issues identified as a threat to public safety are immediately addressed.

PG&E also uses the data it collects to help plan and prioritize future work. One of the tools PG&E uses is a risk management program that inventories each of the 20,000 segments within PG&E's natural gas transmission pipeline system and evaluates them against criteria such as:

- The potential for third party damage like dig-ins from construction
- The potential for corrosion
- The potential for ground movement
- The physical design and characteristics of the pipe segment

PG&E also considers the proximity to high density populations, potential reliability impacts and environmentally sensitive areas.

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Based on all of these factors, PG&E determines which segments warrant further evaluation, monitoring or other future action. PG&E also creates a list of the "Top 100" segments to help inform future work plans. As conditions change from year to year, PG&E reevaluates the segments included on the list.

There are a range of actions PG&E may take for the segments identified on the list. For example, if a segment is on the list due to a high level of construction activity in the area, PG&E might enhance the physical markings of the lines and conduct outreach to help avoid accidental dig-ins. In other cases, PG&E may increase its monitoring or propose to rebuild the line sometime in the future.

91. You've been saying you will not release the list or locations of pipelines due to security reasons. Now you've released a list and maps. Isn't that contradictory?

The safety and security of PG&E's gas system remains a high priority of our company. The maps we provided on Sept. 20 are a result of our efforts to strike an appropriate balance between protecting the energy delivery system and releasing enough information to address our customers' concerns. The public maps do not include as much detail as those our technical experts use to monitor and maintain our system.

92. Is there a phone number customers can call about gas line locations and pipelines on PG&E's priority list?

1-888-743-7431

93. I heard from City Manager X that you are notifying government officials that they have a Top 100 pipeline in their area. Is that true?

We are making contact with city and county officials throughout the service area and letting them know if there is one of these pipeline sections in their area.

94. Can you tell me what you told City Manager X?

We will soon share more detailed information on PG&E's natural gas transmission system, and we look forward to providing you with additional information in the near future.

95. What is the status of all the projects listed in the Top 100? Why are only a few in the construction phase?

This is a long-term planning document, so it makes sense that most projects would be in various states of monitoring, planning and evaluation.

96. What is the significance of the relative ranking of the Top 100 list? Is something listed #1 on the list deemed a higher priority than something ranked 50th or 100th? PG&E's "Top 100" list is not a list of projects PG&E has identified as "priority candidates for replacement or upgrade for reasons of public safety." Any issue identified as a threat to public safety is always addressed right away. We do not delay or defer work that is necessary for public safety.

The “Top 100” list is part of our ongoing risk management program, and is one of the tools used to prioritize our engineering analyses and future work on our transmission pipelines. Due to the serious consequences of a pipeline failure, we use very conservative assumptions as to the status of a pipeline when conditions are not yet fully known.

In the population of 20,000 segments, each segment is evaluated based on risk factors in a multi element algorithm. The product of this effort is a relative listing/ranking of all segments with the highest product being number one. The list of 100 is simply the top 100 highest products of that mathematical process. The Top 100 list is then provided to pipeline engineers to further evaluate each segment for subsequent action. There is no precise correlation between ranking number 1 and ranking “n” as to sequence of evaluation or action. Each segment in the top 100 is evaluated. The engineers’ professional judgment will determine, for example, that number 21 may not need any action, but number 72 may.

97. Please provide a detailed description of the criteria PG&E uses in deciding which pipeline segments to characterize as high priority projects, including any mathematical formulas used to rank such segments in terms of priority.

The variables considered under each of the four principal factors are as follows:

Potential for third party damage

- Potential ground break frequency
- 3rd party damage prevention
- Ground cover protection
- Pipe diameter
- Wall thickness
- Line marking
- Maximum operating pressure (MOP) vs. pipe strength
- Third party leak rate
- Public education program efforts

Potential for corrosion (25 percent weighting):

- Soil resistivity
- Corrosion survey criteria
- Coating visual inspection
- Casing survey
- In-line inspection
- External corrosion leak rate
- Coating design
- DC/AC interference
- Coating age
- MOP vs. pipe strength
- Pipe visual inspection
- Test pressure
- External corrosion direct assessment (ECDA)

Potential for ground movement (20 percent weighting):

- Water/earthquake fault crossings/levee crossing
- Soil stability
- Seismic area
- Erosion area
- Ground movement mitigation efforts
- Girth weld consideration

Physical design and characteristics (10 percent weighting)

- Pipe seam design
- Girth weld condition
- Material flaws or unique joints
- Pipe age
- MOP vs. pipe strength
- Design/Materials Leak Rate
- Test Pressure vs. Pipe Strength

In assessing potential consequences, the following are principal factors:

- Population density in proximity to pipeline
- Pipeline proximity to a potential area of population concentrations
- Potential impact radius

Impact on environment:

- Presence of a water crossing
- Passing through or adjacent to an environmentally sensitive area

Impact on reliability

- Reliability impact on customers in the event of a pipe failure
- Number of customers to experience a gas service outage
- Proximity of critical facilities

98. For the pipe segments that are listed on the Top 100 due to the potential for ground movement, what is typically done to mitigate potential movement?

Response: The mitigation depends on what the most significant attributes of the threat are. Here are some examples based upon actions PG&E has taken: (1) where the relative risk ranking for a segment is high because it crosses a fault, PG&E may redesign the fault crossing so the pipe can safely retain pressure in the event of ground surface faulting (although it may need to be replaced again if there is ground surface faulting); (2) where the pipe is in a known slide area, PG&E may reroute the pipe around the slide area; and (3) where the pipe is on the list because of potential high ground acceleration in the event of a large earthquake and the pipe was installed prior to 1947, PG&E may replace the pipe.

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Gas Transmission Surveys/Inspections

99. Have we conducted a baseline assessment of this pipeline as required by the 2002 Pipeline Safety Improvement Act? - Within 10 years of Act or five years for "risky" lines?

Yes. The first pipeline integrity assessment of Line 132 was conducted in March 2005. Another assessment was done in October 2009.

100. Has the pipeline been inspected under the IMP Program?

Yes. See answer above.

101. When was the pipe last leak-surveyed?

The section of transmission Line 132 was surveyed for leaks in March 2010. The distribution network in the area was surveyed for leaks in June 2008.

102. How often is that pipe leak-surveyed?

The section of the transmission line where the accident occurred is surveyed for leaks at least once a calendar year and/or not less than every 15 months. The distribution network where the accident occurred is surveyed for leaks every five years.

103. Does PG&E usually conduct leak surveys of its natural gas transmission system?

PG&E routinely conducts leak surveys of all our natural gas transmission and distribution lines. In 2008, we accelerated the distribution program to complete it in three years instead of the usual maximum five.

104. What are the surveys designed to do?

Leak surveys are designed to confirm the integrity of our transmission and distribution lines by trained and federally qualified operators, using approved instruments and techniques.

105. Have you resurveyed the transmission lines in San Bruno?

Two days after the accident in San Bruno, we began surveying the three transmission lines that feed the San Francisco Peninsula. As an added safety measure, we have also reduced operating pressure by 20 percent on these three lines. The leak surveys were completed on September 10.

106. PG&E has talked about accelerating gas line inspections, getting it done in 3 years instead of 5, for distribution. How does transmission fit in here?

We perform surveys for leaks on our transmission lines annually or semi-annually.

107. Do we have additional background on how we conduct our external corrosion pipeline inspection program, such as explaining the "poking ground" method?

External Corrosion Direct Assessment (ECDA) is a four step process:

1. Preassessment: provides guidance for selection of the pipeline segment and which indirect methods to be used.
2. Indirect Examination: indirect aboveground electrical surveys are performed to detect coating defects and the level of cathodic protection.
3. Direct Examination: Based on the indirect examination, points of potential interest are excavated to expose the pipe surface for metal loss measurements, and estimated corrosion growth rates.
4. Post Assessment and Continuing Evaluation: sets re-inspection intervals, provides a validation check, and provides performance measures.

One of the tools used for indirect examination that provides an indication of the condition of the protective coating on a pipeline is called direct current voltage gradient (DCVG). This is the method described as “poking the ground.”

108. Did we do Internal (not External) Corrosion Direct Assessment or any kind of in-line cleaning on Line 132 (i.e. scraper pig)?

Yes; where ECDA access was not available and at the most probable locations for internal corrosion to occur.

109. How do we check gas pipelines for signs of internal (not external) corrosion?

A variety of methods including In Line Inspection (ILI), Ultrasonic testing, x-ray and Guided Wave assessment are used.

110. What is Guided Wave and Ultrasonic Testing?

Both of these testing technologies use waves similar to sound waves to detect defects in pipeline walls. Ultrasonic testing techniques use waves traveling from the outer surface of the pipe wall to the inner surface of the pipe wall to detect wall thickness loss at a point. Guided wave testing technologies use lower frequency waves directed through the pipeline wall longitudinally to detect defects in larger areas the pipe wall.

111. What company do we use to conduct corrosion assessments?

A variety of inspection companies; for example, Mears, G.E., Tuboscope.

112. How much money goes to Internal Corrosion Direct Assessment (Jackson could only find funding for ECDA in our rate filing)?

In 2009 alone approximately \$22Million was invested to modify pipelines that allows them to be internally inspected. An additional \$5 million was spent on in line inspections.

113. Can we provide Line 132 mapping that shows any "low spots" or "dead zones"?

PG&E is unable to respond to this question as the layout of line 132 is connected to the NTSB's ongoing investigation.

114. Upon finding evidence of liquid in the filters at the Milpitas regulator station, what steps did PG&E conduct to keep any potential corrosion in check?

PG&E installed a liquid separator at Milpitas as a means of preventing liquids from travelling downstream into the L132 system. PG&E has used guided wave and ultrasonic testing on L132. No internal corrosion has been found.

If Asked As Followup: By "has used" and "has found," do we mean that we specifically conducted these tests after and in response to finding evidence of liquid in the filters at the Milpitas regulator station to confirm that no internal corrosion was found, or that we "have used" this testing in general?

The Internal Corrosion Direct Assessment (ICDA) testing for L-132 in 2007 found no evidence of internal corrosion.

115. When did we conduct Guided Wave and Ultrasonic Testing?

2007

116. Guided Wave uses long-wave ultrasound technology, so when we say we conduct Guided Wave and Ultrasonic Testing, do we mean manual or direct ultrasonic testing?

The ultrasonic testing conducted as part of the Internal Corrosion Direct Assessment conducted in 2007 was performed manually.

117. How much microbially influenced corrosion (MIC) has been found in our system and what do we do when we find it, if not a scraper pig?

PG&E has repaired 7 leaks on transmission pipelines due to internal corrosion since January 2005. We found that MIC might have been a factor in only one of the leaks.

When discovered, PG&E repairs the leak, removes any liquids and adds microbial inhibitors to the pipeline when appropriate.

Further Background:

Since 2005, PG&E has encountered 7 internal corrosion leaks on its gas system. Of the 7 internal corrosion leaks, 4 were on gas gathering lines that carry gas from producing wells in California to PG&E's gas transmission pipeline system. PG&E's gas gathering pipeline system is located in specific areas where producing natural gas wells are located in northern California. We have no information as to the cause of the gas gathering line leaks.

Of the three gas transmission pipeline leaks, we found that MIC might have been a factor in only one of the leaks. This possible conclusion is based on post-repair testing at 8 locations on this pipeline. That testing found that conditions favorable to MIC might be present at one of the 8 locations. On the basis of this analysis, we concluded that MIC might have been a factor in one of the reported leaks.

118. Who did internal corrosion direct assessment on Line 132 before the San Bruno accident (if it was done before)?

The Internal Corrosion Direct Assessment (IDCA) of L-132 was conducted in 2007. Several different contractors contributed to the ICDA such as performing flow analysis and conducting guided wave testing. The ICDA was performed by PG&E employees.

119. What pressure was Line 132 operating at when it ruptured?

PG&E is unable to respond to this question as the pressure of line 132 is connected to the NTSB's ongoing investigation.

120. Referring to the 2011 GRC PowerPoint titled, PG&E's Gas Leak Survey Program – what is the relevance to San Bruno?

The Accelerated Leak Survey effort referred to in the PowerPoint was a comprehensive re-survey of all PG&E's gas distribution facilities previously surveyed in 2006 and 2007. The Accelerated Leak Survey did not include transmission facilities (such as this pipeline), since transmission pipelines such as the one in San Bruno is leak surveyed at least once a year.

Among the benefits of the leak survey program was that PG&E improved its survey process and enhanced its training for leak surveyors. On page 6, it states that on the Peninsula, four of four sampled lots did not meet the criteria in the leak survey.

PG&E sampled its territory to see if there was a significant difference between the historical results and the results using the new survey process. Four of the four Peninsula lots did not meet the criteria, which is one of the reasons PG&E decided to resurvey the entire system. PG&E has already completed the Accelerated Leak Surveys in the Peninsula Division, and, as noted above, the transmission pipelines are surveyed at least once a year.

121. Had the Peninsula portion of the gas distribution system been fixed before the pipeline rupture?

The Peninsula portion of the gas distribution system was not and is not in need of a "fix." Any Grade 1 leaks found during the Accelerated Leak Survey were promptly repaired.

122. What is the difference between a direct assessment versus in-line inspection?

There are three federally approved methods to complete a transmission pipeline integrity management baseline assessment: In-Line Inspections, Pressure Testing and External Corrosion Direct Assessment (ECDA).

- In-line inspection involves a tool (commonly known as a "pig") inserted into the pipeline, which identifies areas of concern such as potential metal loss (corrosion) or geometric abnormalities (dents) in the pipeline. Excavations are performed in areas of concern as required by federal regulations.
- External Corrosion Direct Assessment is a four step process:
 - *Preassessment*: provides guidance for selection of the pipeline segment and which indirect methods to be used.
 - *Indirect Examination*: indirect aboveground electrical surveys are performed to detect coating defects and the level of cathodic protection.

- *Direct Examination*: Based on the indirect examination, points of potential interest are excavated to expose the pipe surface for metal loss measurements, and estimated corrosion growth rates.
- *Post Assessment and Continuing Evaluation*: sets re-inspection intervals, provides a validation check, and provides performance measures
- Pressure testing involves filling the pipeline with a test medium (i.e. water, gas, air) and testing to a certain pressure for specified duration.

123. What is the age of the transmission lines in Fresno, Kings County and Madera County?

PG&E's transmission pipelines in the three county area have been installed from 1931 to 2009, with the majority installed in the 1950s and 1960s.

124. When were (the lines) last inspected? What was found?

PG&E inspects its transmission pipelines semi-annually or annually for leaks, quarterly for general inspection patrols and every seven years for an integrity inspection if warranted per Integrity Management program rules. No unusual or adverse conditions have been found on the transmission pipelines in those counties.

125. Were (the lines) slated for replacement or OK?

The pipelines are not scheduled for replacement.

126. How much maintenance work has PG&E done on the lines in the three counties in recent years?

PG&E has performed all required pipeline maintenance on the pipelines, as outlined above.

127. Are any transmission pipelines currently scheduled for replacement in 2010 or 2011?

PG&E's transmission pipelines in the three counties are not scheduled for replacement in 2010 or 2011 at this time.

128. Have there been any CPUC reportable incidents on these transmission pipelines since 2005?

There have been no reportable incidents on PG&E's transmission pipelines in the three county area since 2005.

129. Are there any transmission pipelines in Tulare County?

No, there are no PG&E transmission pipelines in Tulare County.

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Pigging

130. PG&E did not use an internal pigging device on the San Bruno line. When a PG& E officer indicated that PG&E did not use an internal pigging device did she mean the San Bruno section only, or the entire line?

The entire pipeline.

131. How many miles of PG&E lines are pigged?

As of 12/31/08, 155 miles of HCA pipe had been pigged which is 26.5% of all miles of HCA pipe inspected.

132. How important is pigging as a means of detecting potential problems?

Pigging or In-Line Inspections are one of the three federally approved methods within 49 CFR Part 192, Subpart O to complete an Integrity Management assessment. The other two federally approved methods are External Corrosion Direct Assessment (ECDA) and pressure testing.

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Reports/Claims/Accusations

133. Customers in the area have reported that they smelled gas and called PG&E to report it. Are there any records of customers reporting gas in the area?

We take seriously all reports of gas odor or gas leaks and work to resolve these quickly – the most serious within one hour and all within the same day of receiving a call.

We have found no record of anyone reporting smelling gas in the affected San Bruno neighborhood from September 1 and September 9. We reached that conclusion after a thorough review of all calls received by our four contact centers.

We have reviewed all calls in the affected area from July 1 – Sept 9. We found two gas leak calls: July 23 and July 27; they were adjoining properties; a small leak was found at the meter (distribution system) of one home, which was repaired. Statistically, we've reviewed 3.1 million calls.

134. A customer whose house was destroyed claims he saw PG&E checking for gas leaks in the area days before the accident. Is this true?

In examining our records from September 1 to September 9, we have thus far found no record of PG&E performing gas leak surveys in the affected area. However, people may have seen meter readers or electric crews in the area.

135. TURN claims that PG&E ignored customer complaints about gas leaks in San Bruno. What's your response?

It does everyone a disservice to speculate before the investigation is complete. The National Transportation Safety Board (NTSB) has jurisdiction over the investigation. We

are cooperating fully with NTSB and other agencies to identify the cause of this accident. Until then, we will not engage in speculation.

136. Regarding a statement made in the Sacramento Bee: According to PG&E's filings with the CPUC, an internal audit in 2007 of its residential distribution lines in Sonoma County found major problems in how it reported gas leaks.

In 2007, PG&E identified an incident in which one leak surveyor in one division had falsified records. PG&E took swift disciplinary action that included termination of that employee as well as management-level employees who shared accountability.

Upon discovery, PG&E immediately developed a plan for corrective action including a complete resurvey of the entire division. Further, to ensure that falsification of records was not a systemic issue; PG&E evaluated its gas leak survey activities across the system.

PG&E did not find any additional evidence of falsification.

At the same time, while performing this evaluation, PG&E found opportunities to improve consistency, tools, processes and training in survey techniques. As part of the quality improvement process, PG&E introduced an enhanced, uniform, leak-grading criteria. These enhancements led us to significantly improve the consistency of our leak detection methods. PG&E also compressed five years of routine activity into less than three; this was an unprecedented effort. We brought in additional resources, identified leaks, and repaired leaks.

PG&E also wants to emphasize that there were no accidents or safety issues related to the surveys that were falsified.

137. There are reports that you have segments of pipe that are sewn together rather than solid pieces. Is that a common practice?

PG&E, and the industry, does not "sew together" pipes; pipes are welded, not sewn. The "sewing together" of pipes is not a term used at PG&E. This term may refer to the longitudinal seam which is a common characteristic of the manufacturing process for many pipes, since many pipes originate from plate steel which is rolled and then welded to form cylindrical pipe.

138. What is PG&E's response to the Class Action Lawsuit that has been filed (seeking immediate release of the \$100 million dollar fund)?

PG&E hasn't had a chance to review the lawsuit in detail but we're disappointed to hear about legal action this close to the terrible tragedy. Right now, our focus is helping the families of San Bruno rebuild and recover from this event. Our efforts don't preclude legal action but it's regrettable that this has happened before an NTSB investigation has been completed. We'll continue to focus on recovery efforts and turn to this in due time.

If asked again about the lawsuit as a follow-up:

We are committed to our customers in San Bruno and will continue to be there to help rebuild the city, and we are currently reviewing those documents.

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Falsified Gas Leak Survey

139. We have documents from TURN that say your employees falsified gas leak survey records.

In the last several years, PG&E has spent well over \$100 million to improve its gas system. In 2007, PG&E identified an incident in which one leak surveyor in one of PG&E's 18 divisions had falsified records. PG&E took swift disciplinary action that included termination of that employee as well as management-level employees who shared accountability. Upon discovery, PG&E immediately developed a plan for corrective action including a complete resurvey of the involved division. Further, to ensure that falsification of records was not a systemic issue; PG&E evaluated its gas leak survey activities across the system. PG&E did not find any evidence of falsification. At the same time, while performing this evaluation, PG&E found opportunities to improve consistency, tools, processes and training in survey techniques. As part of the quality improvement process, PG&E introduced an enhanced, uniform, leak-grading criteria. These enhancements led us to significantly improve the consistency of our leak detection methods.

140. How many employees were involved?

This was an isolated event involving one of several hundred employees who do this type of work. It was in no way reflective of the integrity of the vast majority of our people.

141. Were there any accidents or safety issues related to the surveys that were falsified?

No.

142. Why didn't PG&E provide this information to the public?

There was no safety threat to the public. We provided our regulator, the CPUC, this information as we discovered the deficiencies and designed and implemented the improvements.

143. Where did this occur?

It was an isolated incident in one division.

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CPUC

144. What is your response to the CPUC's Sept 13 letter directing PG&E to take action on multiple items relating to its gas system?

We are working to comply with all aspects of the letter.

145. Last September, PG&E filed a document with the CPUC for the natural gas rate case, requesting money to install separators to get water out of gas lines. A significant amount of water was getting into pipelines that connect to Milpitas, including 100, 101, 109, and 132, causing corrosion and safety problems. What kind of problems were created by this situation?

PG&E was finding liquids in filters at distribution regulator stations served from Lines 101, 109 and 132 from Milpitas Terminal. The liquids issues were localized in De Anza Division (Cupertino, Los Gatos, Mountain View, Sunnyvale etc.). The liquids were mostly compressor oil rather than water. The presence of liquids can cause corrosion and potentially damage equipment. [Note: We had collapsed filters and had an over pressure situation with a distribution system in De Anza due to liquids fouling pilot regulators.]

146. The work was scheduled to be done by November 2009. Was it ever completed?
Yes, two large filter-separators were installed at Milpitas Terminal in November 2009 and post installation testing shows that liquids are not showing up in regulator station filters in De Anza Division.

147. Since that document said PG&E was concerned about corrosion from the liquids, do you know if those lines were checked for corrosion after the separators were installed, and if so, did you find corrosion?

PG&E installed the separators on those lines to mitigate operational issues being caused by liquids clogging certain filters, not corrosion issues. PG&E has continued to perform all routine surveys on those lines.

148. How long had liquid been getting in?

As stated previously, PG&E found the presence of some liquids in filters at distribution regulator stations served from Lines 101, 109 and 132 from Milpitas Terminal localized in De Anza Division (Cupertino, Los Gatos, Mountain View, Sunnyvale etc.). Small amounts of liquids have been found in those lines for approximately 10 years, but only recently did the levels of those liquids cause the operational issues that led to PG&E's decision to install separators.

149. What were the "at least four over-pressure incidents at regulator stations feeding DFMS," as cited in our 2011 GAS TRANSMISSION AND STORAGE RATE CASE? Where did they take place (which of the 4 lines)?

The DFMs mentioned are within PG&E's De Anza and San Jose Divisions, and feed gas at transmission pressure to the cities of Milpitas, San Jose, Santa Clara, Los Gatos, Campbell, Saratoga, and Cupertino.

150. What is the significance of "over-pressure incidents" (what problems do they/could they cause)?

An over-pressure incident is when the pressure in a pipeline inadvertently rises above the Maximum Operating Pressure (MOP) of the pipeline system. The consequence of such an incident depends on how much the pipeline pressure exceeds the MOP. The great majority of the incidents do not cause any upset in the routine operation of the systems as the systems

are capable of handling pressures well above the MOP (due to a design safety factor required by Federal safety regulations).

151. Is this something we deal with all the time, or is this unusual?

An over-pressure incident is an unusual event. PG&E takes over-pressuring of pipelines very seriously by following-up on the event to determine root cause and taking remedial action as warranted by the particular incident.

152. What is PG&E doing to comply with the CPUC's order to survey the entire gas transmission system?

To comply with the CPUC's order to survey our entire gas transmission system, PG&E is utilizing PG&E employees, mutual aid from other utilities and outside contractors that will all work under PG&E supervision. The techniques used to leak survey the system will be a combination of leak survey by foot patrol and leak survey by aerial patrol.

Regarding the foot patrol, on Tuesday, September 21, 89 leak surveyors, supervisors and support staff will arrive at PG&E's training facility in Livermore to complete training and operator qualification. San Diego Gas and Electric and So Cal Gas together will send 34 employees and the other 56 surveyors are outside contractors.

For aerial patrol, PG&E has already begun helicopter flights with PG&E employees and the technology needed to identify leaks from the air.

153. Is PG&E increasing staff for its pipeline safety and maintenance efforts, especially in light of the CPUC's recent direction to investigate all lines?

To comply with the CPUC's order to survey our entire gas transmission system, PG&E is utilizing PG&E employees, mutual aid from other utilities and outside contractors that will all work under PG&E supervision. The techniques used to leak survey the system will be a combination of leak survey by foot patrol and leak survey by aerial patrol.

Regarding the foot patrol, beginning Wednesday, September 22, training will begin at PG&E's training facility in Livermore to complete training and operator qualification of approximately 106 people. These people will come from mutual aid agreements with San Diego Gas and Electric Company and So Cal Gas together with outside contractors.

For aerial patrol, PG&E has already begun helicopter flights with PG&E employees and the technology needed to identify leaks from the air.

PG&E is currently evaluating its long-term staffing needs related to its pipeline safety and maintenance work.

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154. I heard PG&E is donating money to San Bruno residents – how much?

We are committed to our customers in San Bruno and will be there to help rebuild the city. One step in that direction is the “Rebuild San Bruno Fund,” in which PG&E pledged up to \$100 million for the residents and city of San Bruno to help recover from last Thursday’s tragic accident.

155. \$100 million is a lot of money – it sounds like you are admitting fault?

We know that no amount of money can ever make up for what’s been lost and we are fully complying with the NTSB’s investigation because we want to get the community the answers it deserves. This program is just one piece of our promise that PG&E will live up to its commitment to help rebuild this community and help the people of San Bruno rebuild their lives.

156. How are San Bruno residents getting the funds?

On Monday (9/13) PG&E provided San Bruno officials with an initial check for \$3 million to help compensate the city for its estimated expenses incurred to date. The company is also taking immediate steps to provide assistance to affected residents. For residents in the affected area, PG&E will provide disbursements of \$15,000, \$25,000, or \$50,000 per household depending on the extent of damage incurred.

157. If people accept PG&E’s money – will they be ineligible for a full insurance claim or be forced to waive other compensatory benefits?

No. Residents are not being asked to waive any potential claims in order to receive these funds. Also, these funds are being provided in addition to the company’s ongoing provision of funds to ensure affected residents continue to have access to temporary housing and other basic necessities.

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Customer Claims

158. What is our claims process for San Bruno residents in the affected area?

Our current claims process is mostly for immediate needs. Our claims representatives are at 900 Cherry Avenue every day from 9 a.m. to 6 p.m., and our claims representatives are also going door to door to assist customers. We are also streamlining our process for larger claims and longer term needs, so that it will be easier for our customers when those requests begin to come in.

159. Can customers file multiple claims, or are we encouraging them to wait and file one claim?

Whichever best meets the needs of our customers. We know that our customers may need to be reimbursed for some items now, and then file an additional claim later.

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PHMSA

160. In 2004, the PHMSA ordered utilities to do risk assessments that take into account the special dangers posed by high-pressure lines that carry gas under heavily populated areas. Have we done this?

PG&E has fully implemented 49 CFR Part 192 Subpart O which mandates integrity assessments in High Consequence Areas. These regulations require all pipeline operators to identify transmission lines in high consequence areas by December 17, 2004, and to risk rank those pipelines for the purpose of prioritizing pipeline assessments. PG&E completed this activity prior to the deadline. The regulations also require fifty percent of the transmission pipelines in “High Consequence Area” to have their baseline assessments completed by December 17, 2007, and PG&E completed that activity by the deadline. The regulations require all transmission pipelines in HCAs to have their baseline assessments completed by December 17, 2012, and PG&E is on track to meet that deadline.

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San Bruno Wildfire Insurance Application Q&A

161. Is the San Bruno accident covered by wildfire insurance?

No. The San Bruno accident does not fall within the definition of “wildfire”, and will not be covered by the wildfire insurance application.

162. Why does PG&E need wildfire insurance?

The increasing number of fires in California over the last several years has made the liability insurance market for wildfire incidents uncertain and unstable, leading to higher costs for less coverage statewide.

[Only if asked]

In general, why do customers have to pay for damage caused by your equipment?

This is essentially the way it is now – we recover the costs of insurance premiums in rates, as does any other business. These are costs of doing business and the CPUC has allowed recovery of those costs.

[Only if asked]

What is the rate impact?

Because this would only go into effect in the event of a wildfire that involved our equipment, there is not a rate impact at this time.

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About PG&E Gas System

163. What is the basic outline of your gas system?

PG&E has an extensive natural gas system, stretching from the Oregon border down to Bakersfield. This system includes 42,141 miles of natural gas distribution pipelines and 6,438 miles of transportation pipelines, serving 4.3 million natural gas customer accounts. High-pressure transmission lines transport the natural gas to the distribution system via a network of mostly underground lines. The gas in these lines provides sufficient supply to meet short-term peak demands. The distribution system distributes gas to the customer.

164. How many gas transmission lines do we have in San Mateo County?

Excluding connectors or distribution feeder mains, PG&E has three transmission pipelines in San Mateo County

165. What is the oldest pipeline we have?

PG&E has pipeline that was installed prior to the 1940s. This pipe is regularly inspected and maintained to ensure integrity.

166. What pressure do our gas transmission lines typically operate under?

Gas transmission lines in PG&E's system typically operate between 100 and 1040 psig. PG&E has short pipelines which interconnect to the McDonald Island Storage Facility which operate at 2160 psig.

167. What is the percentage of older to newer pipes in our system?

The bulk of PG&E's system has been installed since 1950.

168. Can you give us an overview of you gas control systems?

- PG&E has an extensive natural gas system, stretching from the Oregon border down to Bakersfield.
- This system includes approximately 42,000 miles of natural gas distribution pipelines and approximately 6,500 miles of transmission pipelines, serving 4.3 million natural gas customer accounts.
- High-pressure transmission lines transport the natural gas to the distribution system via a network of mostly underground lines. The distribution system distributes gas to the customer.
- The Milpitas Gas receives gas from Arizona and redirects the gas to our customers in the East Bay, Peninsula and San Francisco.
- In San Francisco, our Gas Control Center is a 24/7 facility that monitors PG&E's natural gas system.
- Operators in our San Francisco Gas Control Center utilize our SCADA system to monitor operating information on our gas system. SCADA stands for Supervisory Control and Data Acquisition.
- Using SCADA information and other available tools, our operators monitor compressor stations and pipelines along our natural-gas system and are able to adjust pressure and flow rate within the system, as needed.
- Sensors along our natural-gas system feed information about pressure, flow rate and other operating information to SCADA where it is used by our operators.

Only if asked:

- Our Milpitas Gas Terminal is unmanned, although crews frequently work at the site.

169. How many people normally staff the Gas Control Center?

During the weekdays the San Francisco Gas Control Center has 5 or 6 operators on shift and on weekends there are 4 operators on shift.

170. How many were working when the accident occurred on Sept. 9?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

171. How are pipe pressures monitored in the system?

PG&E uses Supervisory Control And Data Acquisition (SCADA) systems to monitor pressure in the transmission and distribution gas system. Pressure readings are taken throughout the system and monitored 24 hours a day, seven days a week by PG&E personnel in the Gas System Control office in San Francisco.

172. Did our systems detect any gas pressure, flow changes or other conditions prior to the explosion?

While we wish we could be more responsive, as a result of the NTSB investigation we are not permitted to discuss the specific details related to this matter.

173. In general, how do alarms appear to operators?

Sensors along our natural-gas system feed information about pressure, flow rate and other operating information to our San Francisco Gas Control Center where it is view and used by our operators. When a sensor reports a reading that passes a pre-determined alarm point, the SCADA system displays an alert message .The alarm must be acknowledged, analyzed and followed-up on by the operator.

174. Now that we have confirmed that there were no plans to replace the SCADA system in Milpitas, and that it had not been recently replaced, why are the Brentwood and San Francisco SCADA systems scheduled for replacement in 2011?

PG&E has no plans to replace its current SCADA system. Enhancements and modifications to the SCADA system occur periodically as pipeline facilities are added, replaced, or reconfigured.

175. Is the only SCADA system that is relevant to line 132 Milpitas, where it originated, or is the SF SCADA system also relevant because it lies on the opposite end of line 132?

PG&E has only one, comprehensive SCADA system to monitor the operation of its pipeline system. Both ends of the Line 132 pipeline are contained in the single SCADA system.

176. Could you provide any additional information about the SCADA system in general – what additional information can PG&E provide about the SCADA system and how it works?

PG&E utilizes a single SCADA system to monitor the operation of the transmission and distribution pipeline system 24 hours a day, 7 days a week. PG&E's SCADA system utilizes standard industry software similar to all gas utilities.

177. Could you provide SCADA details during the time of the event?

Due to the ongoing NTSB investigation of the San Bruno incident, PG&E can not provide any detailed information from its SCADA system pertaining to the event.

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TURN Response

178. NOTE—Similar to question 17 and new questions added at end. State regulators in 2007 gave PG&E the go-ahead to spend \$5 million of ratepayer money to replace a section of the same pipeline that exploded last week in San Bruno. But the work never got done as scheduled in 2009, and this year you asked for another \$5 million to do the same job by 2013, according to documents you submitted to the California Public Utility Commission as part of a general rate-increase request. Can you respond?

At the outset, we want to be clear that this is a different section of pipe, approximately 2.8 miles away and installed at a different time than the pipe that ruptured.

PG&E is committed to performing the work necessary to assure the safety of its gas transmission system. Accordingly, PG&E is constantly prioritizing its projects using the most recent up to date information available.

In this particular case, PG&E identified this line section in 2006 as being a project for 2009 its workpapers for the 2008 gas transmission rate case, and sought five million dollars to fund the work. In early 2008, the pipeline engineer responsible for this area reanalyzed all available information on this segment. The information he reviewed included all of the data from the External Corrosion Direct Assessment (ECDA) conducted on segments of Line 132. In addition to reviewing the available data, the responsible engineer personally conducted a field investigation of the segment. This involved driving the entire section, observing that a portion of it was contained within a well-marked right of way and a portion under a public cul-de-sac. After this, in consultation with other pipeline integrity engineers, the responsible pipeline engineer determined that third party dig-in risk did not warrant immediate replacement of the segment (a third-party dig had caused a leak at MP 43 in November 2001) and the segment had not experienced any leaks due to corrosion. Based upon his review of information from the prior ECDA, his own observations, and his engineering judgment, and knowing that PG&E was going to be performing another ECDA later that year or the next year, he determined that the work did not need to be done as previously scheduled.

The 2006 work paper forecast \$5 million for the replacement of this segment of Line 132. When the pipeline projects were reprioritized, that forecast money was spent on other priority projects instead. In fact, in 2008 and 2009, PG&E spent a total of \$380 million on gas transmission capital projects, \$12 million more than forecast.

179. What is the status of the project and how have we spent the funds, if at all?

No significant work has begun on this job as it is scheduled for 2013.

180. When will the project be completed?

The project is scheduled to be completed in November, 2013.

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Misc.

181. We received a media advisory saying Chris Johns is scheduled to testify next week before a Senate subcommittee. Is that true?

Mr. Johns is scheduled to appear before the U.S. Senate Committee on Commerce, Science, and Transportation: Surface Transportation and Merchant Marine Infrastructure, Safety, and Security Subcommittee hearing on pipeline safety. Mr. Johns is scheduled to be joined by representatives from the NTSB, CPUC, the Pipeline Safety Trust and San Bruno Mayor Jim Ruane.

182. Was there a natural gas accident with a fatality in Madera August 22, 2003? What happened?

Yes, a farmer dug into PG&E transmission pipeline 118 while plowing his field. The line was marked for the farmer but the damage resulted in a leak that ignited causing equipment damage and the operator died 3 weeks later as a result of his injuries.

183. How much has PG&E spent on its gas system?

In recent years, PG&E has spent well over \$100 million to improve its gas system, which is in addition to money regularly invested in the system.

184. Is there a difference between a gas leak in a transmission line as compared to a distribution line? i.e. would a transmission leak be harder to detect?

There is no significant difference in gas leaks or in detecting gas leaks just because they are on the distribution system vs. being on the transmission system.

185. Have we confirmed pipeline 131, in Fremont, is one of two pipelines in the Bay Area posing the highest risk? Is in or near the Hayward Fault?

FOR FREMONT CITY OR ELECTED OFFICIALS. Line 131 runs from the Brentwood Terminal to the Milpitas Terminal. Line 131 crosses the Hayward fault in the Fremont area. PG&E seismically retrofitted this crossing in 2002.

NOT FOR FREMONT CITY OR ELECTED OFFICIALS: Line 131 runs from the Brentwood Terminal to the Milpitas Terminal. In 2002 PG&E seismically retrofitted Line 131 where it crosses the Hayward Fault.

186. What information do we have on the McDonald Island Pipeline project from 2005?

The McDonald Island Pipeline project was a 6.5 mile pipeline from the McDonald Island underground storage facility to the Brentwood Terminal that added both capacity and reliability to PG&E's system. The new line was bored under both the river and levees so that it would not be vulnerable to possible delta flooding. The pipeline was successfully put into operation in 2007.

187. Why did you cancel your contract with ServPro?

We originally had a contract with that company to do restoration work for our customers. As such, we hold Serve Pro, just like all our contractors, to the highest standards and immediately act when we hear concerns from our customers. Serve Pro is no longer on our list of approved contractors. We cannot get into the specifics of why that company is no longer on our list.

188. When was the last time the line at Ewing School in Fresno was inspected?

An external corrosion direct assessment was performed in June 2010 and a leak survey was performed in March and September 2010.

189. What type of cleaning work are you doing on transformers in San Bruno?

Last week's fire has caused residue and dirt to accumulate on electric insulators and other equipment on power poles. When the first moisture of the season comes, this wet residue can cause electrical arcing or flashovers, resulting in power outages and even pole fires.

There is light rain in the forecast over the next few days, so it's important for our crews to power-wash residue off of insulators as soon as possible.

Starting as early as 8:30am on September 17, PG&E crews and trucks will be in the neighborhood power-washing insulators on power poles, mainly located in backyards. Once again, this work is being done to enhance safety and electric service reliability in the area. Crews will be doing the work safely and as quickly as possible, however the work is expected to take most of the day.

190. Has any of PG&E's \$992 million in general liability insurance been paid out, or are we waiting until the conclusion of the investigation? Is it more difficult for PG&E to get insurance for pipelines that are categorized as high risk?

PG&E does not intend to discuss specifics about insurance coverage this early in the process. We are committed to doing the right thing for our customers. We have established a fund up to \$100 million to help residents and the city of San Bruno recover as soon as possible.

191. Did PG&E receive a request to mark its lines from D'arcy and Hartly Construction which did sewer line work on and around Earl Avenue in San Bruno in April and May 2008? Can we check our records to confirm?

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Yes - PG&E does have a record for a mark and locate request from D'arcy and Harty Construction around Earl Avenue in San Bruno. The request was made in May of 2008 for work to begin in June of 2008.

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