



# Frequently Asked Questions

## System Safety

---

### Is there a transmission pipeline in my neighborhood?

PG&E is committed to providing you with information about the natural gas system that serves your community, neighborhood, home and business. For information about any specific transmission pipeline in your neighborhood, go to [www.pge.com/gassystem](http://www.pge.com/gassystem) to view a map online, or call us at 1-888-743-7431.

### What should I do if I smell gas?

Keep a flashlight handy to investigate minor gas odors. Never use matches or candles to look for gas leaks, and never turn any electric switches on or off if you suspect a gas leak. Check pilot lights to see if they are lit. If the smell of gas continues, or if you have any doubts, open windows and doors and get everyone out of the building. Using a phone away from the building, call 9-1-1 and PG&E at 1-800-743-5000.

### What are you doing about pipelines like the one in the San Bruno accident?

In 2011, PG&E will hydrostatically pressure test or replace approximately 150 miles of pipelines that had segments with characteristics similar to the San Bruno pipeline and had not been pressure tested.

### What is the difference between a transmission pipeline and a distribution pipeline?

Gas transmission pipelines are the backbone of the gas delivery system, much the same as interstates and freeways are the backbone of California's transportation system. Transmission pipelines are generally larger and operate at a higher pressure than distribution pipelines. Transmission pipelines transport the natural gas from the compressor stations and storage facilities to regulators which reduce the pressure before reaching the distribution system. The distribution system feeds the smaller lines that service individual customers.

### Should I be concerned if the transmission pipeline in my community is more than 50 years old?

A properly maintained pipe can operate safely for 100 years or more. While pipeline age is a relevant factor in reviewing the status of pipeline, it is not in itself a cause of concern.

### How do I know the transmission pipeline in my neighborhood is safe?

PG&E has a comprehensive inspection and monitoring program to enhance the safety of its natural gas transmission pipeline system. PG&E 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. We do not delay or defer work that is necessary for public safety. We monitor our gas pipeline system operations 24 hours a day, seven days a week.

### What actions has PG&E taken since the San Bruno tragedy to improve safety?

Since September 2010, PG&E has taken significant initial actions to improve the safety and operations of PG&E's natural gas system – and the safety of the communities we serve.

These include:

- Reduced the pressure on pipelines that had segments with characteristics similar to the San Bruno pipeline and had not been pressure tested.
- Conducted both aerial and ground surveys of the entire natural gas transmission pipeline system.
- Launched a detailed pressure test records review and validation effort.
- Deployed a variety of methods to survey, monitor, and test pipelines on a continuous basis.
- Enlisted industry-leading experts to advise the company on risk management and pipeline integrity assessment.

### Who is PG&E working with to ensure the safety of the transmission pipeline system?

We are committed to earning back our customers' confidence in the safety of our gas system, but we know we have a long way to go. While we have taken significant steps to improve the safety of our system since the San Bruno tragedy, we are committed to doing much more.

We are working under the oversight of regulatory agencies, including the California Public Utilities Commission (CPUC) and the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), as well as the National Transportation Safety Board (NTSB). Our work is continuing as we diligently review our records, and monitor, survey, and test pipelines throughout our entire natural gas pipeline system. Our top priority in 2011 and beyond is to ensure the safety of our natural gas system.

## Pipeline Pressure

---

### Why did you reduce pressure in some of your pipelines?

After the accident we reduced the pressure on pipelines that had segments with characteristics similar to the San Bruno pipeline and had not been pressure tested. This was performed as a near-term precautionary step. PG&E will take subsequent actions, such as

Continued from page one

thorough engineering reviews, field inspections or pressure tests.

### Can reducing pressure impact service?

Pressure reduction can impact PG&E's ability to provide service to its customers on cold days when demand increases. Reduced pressure coupled with increased demand could result in outages. In a worst case scenario where outages are widespread, it could take days, weeks, maybe even months for PG&E to relight all the pilot lights for customers and restore full service.

### What is Maximum Allowable Operating Pressure?

Federal law requires that we establish a Maximum Allowable Operating Pressure, or MAOP, for all pipeline systems. MAOP includes a wide margin of safety and is set at a fraction of the pipe's calculated strength, which is the minimum pressure at which the pipe is expected to begin deforming. For example, the MAOP for pipelines in areas with more than 45 homes within 220 yards per linear mile on either side of the pipeline is set at no more than half the pipe's calculated strength.

### How is Maximum Allowable Operating Pressure (MAOP) determined?

MAOP is determined by one of three ways. First, MAOP can be determined by calculating the Specified Minimum Yield Strength, or SMYS, of the pipe. SMYS is the minimum pressure at which the pipe is expected to begin deforming. MAOP is then set at a fraction of the SMYS, thus allowing for a wide safety of margin. For example, MAOP is 50 percent or less for a pipeline in a more populated area. Second, MAOP can be set based upon pressure tests, where MAOP is set safely below the pressures used in the pressure test. Third, for pipe installed years ago, the MAOP can be based upon the pressure at which the pipeline has operated safely for years.

### Who sets MAOP levels?

Federal law requires that pipeline operators establish MAOP for each section of pipeline or each distinct segment of a gas pipeline system.

### How is pipeline pressure controlled?

PG&E controls pressure on its pipeline system through a series of safety measures, including pressure regulator stations and overpressure protection devices. These systems operate to keep pressure within specified limits. They are surveyed and maintained regularly.

## Survey, Inspection and Testing

### How do you survey and test pipelines?

We are committed to safety and continuously survey, monitor, and test our pipelines. Following the San Bruno tragedy, we launched an accelerated program and re-surveyed the entire natural gas transmission pipeline system. Surveying involves aircraft equipped with state-of-the-art laser leak technology flying over every mile of transmission pipe. On the ground, teams of gas field technicians use vehicle mounted and special handheld leak detectors.

We inspect and test pipelines using a variety of methods, including using pipeline "smart pig," devices equipped with sensors and cameras that are inserted into and travel throughout the length of a pipeline (in-line inspection), and conducting hydrostatic pressure testing, which involves pressurizing the pipe with water at high pressures to safely reveal potential pipe weaknesses, and direct assessment, which involves digging up sections of the pipe.

### What is a leak survey?

PG&E performs annual leak surveys of transmission pipelines, although after the San Bruno accident PG&E performed additional ground and aerial leak surveys for the entire transmission system. Leak surveys are conducted using combustible gas indicators. Newer leak detection instrumentation employing infrared or laser technology is also being used. In the usual case, a leak surveyor walks along the surface of the ground above the pipeline using leak detection instrument.

### What is an in-line or internal pipeline inspection?

There are many internal line inspection, or in-line inspection (ILI), devices available. These devices called "smart pigs" can be equipped with robotic cameras and sensors to check pipe thickness and welds, and can detect flaws and corrosion. The main disadvantage of "smart pigs" is the line has to be designed to accommodate these devices (i.e. "smart pig" insertion and extraction points, smooth transitions between pipe segments, minimum radius turns, pipeline segments of the same size, etc.). Many of PG&E's pipelines were designed and constructed before "smart pig" technology was developed. These lines would require significant reconstruction to accommodate in-line inspection.

### What is a hydrostatic pressure test?

Hydrostatic pressure testing is a proven method for verifying the actual capability of a natural gas pipeline to operate at a safe level of pressure (referred to as the maximum allowable operating pressure, or MAOP). Hydrostatic testing is also used to test such familiar items as scuba tanks, fire extinguishers and air compressor tanks. A hydrostatic test involves pressurizing a section of pipe with water up to a much higher percentage of the pipe material's maximum design strength than the pipe will ever operate at with natural gas. This verifies the capability of a pipeline to safely operate at the desired MAOP and can reveal weaknesses that could lead to defects and leaks in the pipe.

### What are the benefits of hydrostatic pressure testing?

Hydrostatic testing is safe, reliable, and has been successfully used by the natural gas transmission industry for more than 30 years. It verifies the capability of a pipeline to safely operate at the desired MAOP and can reveal weaknesses that could lead to defects and leaks in the pipe.

### Is hydrostatic pressure testing safe?

Hydrostatic testing is a commonly accepted approach to test pipelines. If a pipeline were to fail during testing with water, you essentially have a large water leak. That's because water isn't compressible like air or gas; its energy when released dissipates quickly. Although a release of water could cause some flooding or even buckle a roadbed, PG&E will have plans in place and repair



Continued from page two

teams standing by. PG&E will also inform the local community before testing begins.

### How much of PG&E's natural gas transmission pipeline system will be hydrostatically tested?

In 2011, PG&E will hydrostatically pressure test or replace approximately 150 miles of pipeline segments.

### How long will it take to complete hydrostatic tests on all pipeline segments requiring testing?

We currently estimate conducting the hydrostatic test program could take as long as three years, depending on the final number of pipelines to be tested. Timing will be influenced by such factors as weather and location. For instance, the window to conduct hydrostatic tests will likely be limited to April through October to avoid cold weather periods where customer demand is high.

### How will I know if the pipeline in my neighborhood will be hydrostatic tested?

PG&E will work with state and local government agencies and officials, emergency responders and customers in the areas where PG&E intends to perform these field actions.

### Will my service be disrupted because of hydrostatic testing?

In order to perform a hydrostatic test the pipeline has to be taken out of service for many days. However, we do not expect this work to impact our ability to provide gas service in your area because gas will temporarily be provided as needed from an alternate source.

### How do you dispose of the test water after the hydrostatic test?

After the hydrostatic test is completed, the water used during the test is filtered of any contaminants while it is being drained from the pipeline. PG&E drains the water into large storage tanks and then performs a lab test on the water to determine the level of contamination. If the water is clean, which for the majority of hydrostatic tests it is, the tanks are emptied per the permits acquired prior to construction. Typically, that means properly disposing it by permit into a sewer pipe or into an open field. If the water is not clean, it will be disposed of at a properly permitted facility.

### Is hydrostatic testing regulated?

Yes. Hydrostatic testing of natural gas pipelines has been required by federal law since 1971. The U.S. Department of Transportation's Pipeline and Hazardous Material Safety Administration, acting through the Office of Pipeline Safety, administers the national regulatory program to assure safe transportation of natural gas. In addition, PG&E is regulated by the California Public Utilities Commission.

## Records Review

### Why do you have incomplete records for some segments of your pipeline system?

PG&E has records for pressure tests or historical operating pressure on more than 90% of its 1,805 miles of natural gas transmission pipeline near more populated areas. However, our detailed records review indicates that we do not have pressure test information for most of these segments that were installed before the regulations were enacted that required pressure testing. We've retained independent firms to assist us in gathering records and assessing our record validation process. Since January 2011, we've been tasking teams of engineers to digitize, review and verify more than one million paper records, in addition to scrutinizing newer computerized records.

### What is your plan for addressing the pipelines with incomplete records?

We are prepared to implement an aggressive plan to field test and replace pipe segments wherever appropriate. Potential field actions could include in-line inspections with "smart pigs," new camera inspection technologies, as well as pressure testing or a combination of actions where appropriate. When indicated by field testing, PG&E proposes to excavate, further inspect and/or replace pipelines. This field testing and potential subsequent remediation will begin immediately.

### How long will it take for you to address pipelines with incomplete records?

We are committed to expeditiously addressing any potential safety issues, but we cannot commit to a particular schedule until our review is complete and we have had a chance to analyze the results.

## Gas Transmission System Improvements and Practices

### What are you doing to strengthen the natural gas transmission system?

PG&E has launched a new program, Pipeline 2020, to guide the utility's efforts to strengthen the natural gas transmission system and advance industry best practices over the coming decade. It has five major areas of focus:

- Enhance Public Safety Partnerships
- Modernize Critical Pipeline Infrastructure
- Expand the Use of Automatic or Remotely Operated Shut-Off Valves
- Spur Development of Next-Generation Inspection Technologies
- Develop Industry-Leading Best Practices

More information on PG&E's Pipeline 2020 program can be found at [www.pge.com/pipeline2020](http://www.pge.com/pipeline2020).