Pacific Gas and Electric Company
Pipeline Safety in My Community

Hydrostatic Pressure Testing

Pacific Gas and Electric Company has a comprehensive program to ensure the safety of its natural gas transmission pipeline system. We utilize a variety of tools to verify the status, strength and safety of our pipelines. One of these tools is called hydrostatic pressure testing.

In 2011, PG&E will begin an effort to hydrostatically pressure test many segments of our gas transmission pipeline system throughout our service territory. This field testing effort will begin immediately and is expected to take place over the next four years.

Following is an overview of the hydrostatic pressure testing process.


Hydrostatic Testing

Hydrostatic Pressure Testing Overview

A hydrostatic pressure test involves pressurizing a pipe with water to reveal potential weaknesses.

Hydrostatic testing is a proven method for verifying the 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.

Performing a hydrostatic test involves the following steps:

1) PG&E obtains all required work permits and coordinates activities with local agencies.

2) Gas is temporarily provided to customers from an alternate source during the work.

3) The section of pipeline to be tested is temporarily removed from service and safely vented of all natural gas.

4) The inside is mechanically cleaned prior to testing.

5) The section is sealed on both ends and filled completely with water.

6) The water is pressurized to the test pressure.

7) The test pressure is held and monitored for a set period of time, typically 8 hours.

8) If there is no significant loss of pressure, then the section of pipeline is emptied of water, dried thoroughly, and placed back into service.

If a section does not reach or hold the pressure, that means that the pressure from the hydrostatic test has caused the pipe to either leak or rupture. If that occurs, the leak is located, repaired, and the pipe section is tested again. Sections that don't pass the test are replaced.

State standards for hydrostatic testing new pipelines were established in 1961, and federal standards for hydrostatic testing were established in 1970. Pipelines installed after these regulations became effective were hydrostatically tested prior to being put into service.

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Frequently Asked Questions

What can I expect to occur?

Hydrostatic testing is safe and a commonly accepted approach to test pipelines. Depending on the location of staging areas at both ends of the pipe segment to be tested, visible evidence of the work may include:

- Temporary traffic safety cones and/or detour signs
- PG&E field teams
- Testing equipment, such as above ground pipes and valves
- Machinery and equipment, such as excavators and water tanks

In order to perform a hydrostatic test, the pipeline has to be taken out of service for several days. However, during the work we will provide gas to customers from an alternate source, so service will not be interrupted.

A few days prior to testing, some gas is vented from the pipeline. Depending on weather patterns, there may be a temporary gas odor. It is important to note that the odor and gas release will pose no risk to public health and safety. As part of our normal protocol, we notify the appropriate local agencies of this work. While gas odors are likely from the work being done nearby, safety is our top priority and we encourage any resident who has questions or concerns about the smell of gas to call us 24 hours a day at 1-800-743-5000 or call 9-1-1 immediately.

There is also a chance that a segment of pipe may leak during the water pressure testing. If this were to occur, the result would be similar to a water main break (e.g., disturbed topsoil or buckled pavement with water seepage). PG&E will be closely monitoring the pipeline and pressure throughout the testing and will know if this happens. If a leak should occur, we will promptly repair or replace the failed section of pipe and restart the test. In addition, PG&E is prepared to repair any damage to public facilities and private property caused by any construction work.

Is hydrostatic pressure testing safe?

Yes. 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 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 with records similar in vintage or other characteristics to the records for the segment involved in the September 9, 2010 accident in San Bruno, and where the utility has not yet located pressure test records.

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

We have targeted to complete hydrostatic testing by the end of 2014.

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

Locations of pipelines targeted for testing and replacement in 2011 are shown on the Google Gas Transmission Pipeline System map: www.pge.com/gassystem

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 newly installed natural gas pipelines has been required by federal law since 1970. 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.

Who do I contact if I have questions about hydrostatic pressure tests?

Questions about PG&E's fieldwork and pipeline safety programs should be directed to our special gas project customer representatives at 1-888-743-7431, between 7 a.m. and 6 p.m., Monday through Friday or call our PG&E Customer Care Call Center at 1-800-743-5000, 24 hours per day, 7 days a week.

If you smell natural gas, see downed power lines, or suspect another emergency situation, leave the area immediately and then call 9-1-1 and PG&E at 1-800-743-5000.

More information about our PG&E's Natural Gas Transmission System and our Pipeline Safety Programs, can also be found on our website at: www.pge.com/gassystem