

Employees and emergency first responders are trained to be prepared in a natural gas emergency

To ensure PSE can respond quickly and efficiently in the unlikely event of a natural gas emergency, we:

- Conduct emergency preparedness plan updates and training on a regular basis.
- Assign employees to an emergency duty. Employees are trained and required to participate in mock emergency exercises to test their response skills and refine processes in a non-emergency setting.
- Participate in larger emergency response mock exercises to ensure all utilities and jurisdictions are working together in the event of a region-wide emergency event.
- Regularly train emergency responders (EMTs, firefighters, police officers, etc.) so they are aware of how to handle natural gas emergencies, keeping themselves and the public safe.

We educate our customers and the general public about natural gas safety

While PSE regularly monitors and maintains the system, with more than 26,000 miles of pipeline in our service territory, there is the potential for members of the public to detect natural gas leaks before we do. That's why it's important for our customers and the general public to know what to do if they suspect a natural gas leak. We have an ongoing safety campaign to educate the public about how natural gas gets to a home or business, how to detect a natural gas leak, what to do if you detect a leak, and the importance of calling for underground utility locations before digging.

For more information on natural gas safety:

Visit PSE's natural gas safety Web page at pse.com/gassafety

You may also contact:

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Learn what natural gas smells like by requesting our safety brochure, which has a scratch-and-sniff feature. Order it at pse.com/detectaleak



New 16-inch pipeline being installed in Kent as part of PSE's Kent-Black Diamond natural gas line project.



At Puget Sound Energy, we know our customers, employees, and the communities we serve expect to live and work among a safe and reliable natural gas system. As a result, safety is our top priority when it comes to designing, constructing, operating and maintaining PSE's natural gas system serving nearly 800,000 natural gas customers. We also regularly train employees, contractors and emergency first responders, so they are prepared to respond in the unlikely event of a natural gas emergency, and we educate our customers and the general public about the importance of safety around natural gas.

pse.com/gassafety



Natural gas pipelines are designed and constructed with safety in mind

When designing and constructing new natural gas pipelines, PSE engineers and construction crews adhere to strict federal and state safety requirements related to pipeline design, materials and construction, among other things. Below are a few examples of the safety requirements.

- **Design:** Pipelines are designed so that they operate at less than 20 percent of their specified minimum yield strength, meaning the pipes can withstand five times more pressure than at which they are operated. These pressure rating guidelines results in a safety factor twice the most stringent federal requirement. Also, valves are added at regular intervals along the pipeline, allowing us to control the flow of natural gas in the event of a leak.
- **Materials:** Pipelines are manufactured using high strength materials that meet strict industry specifications related to diameter, wall thickness and, for steel pipes, minimum yield strength (a measurement of the strength of the steel).
- **Corrosion Control:** Metallic pipe is protected against corrosion in two steps: First, a special coating that isolates the pipe from the soil is applied to the pipe before it is installed in the ground. Then, a cathodic protection system is installed that uses a small electric current to mitigate the metallic pipe's natural tendency to corrode, further preventing corrosion.
- **Regulatory Review:** All of PSE's design specifications and standards have been submitted and are on file with the Washington Utilities and Transportation Commission (UTC). All of PSE's new pipelines use these detailed design specifications, and in some instances, due to operating pressure and population density, the proposed new pipeline will require a specific and rigorous UTC approval process before the design is finalized.
- **Construction Requirements:** The pipe is welded using only qualified pipeline welders, and radiography is used to inspect each weld to ensure that it does not contain any hidden defects. Additionally, every aspect of the pipe installation is closely monitored by quality assurance inspectors, from how the pipe is laid in the ground to what type of backfill materials are used when filling in the trench.
- **Testing:** Before putting a new pipeline in service, extensive testing is completed. During this phase, the pipe is pressure tested, which allows us to verify the strength of the pipe, check for any possible leaks and establish the pipe's safe operating pressure. Once the pipeline is put into service, it will not exceed the safe operating pressure established during the testing phase.



Certified pipeline welders working on repairs to a PSE pipeline in Seattle.

We follow strict safety requirements and implement successful safety programs when operating and maintaining the existing natural gas system

PSE's natural gas operations and maintenance plan meets, and often exceeds, all state and federal safety requirements. Below is a list of just a few programs we implement to ensure we are constantly monitoring the system to keep the system safe for our customers:

- **24-Hour Gas Control and Dispatch System:** PSE monitors the natural gas system 24/7. If a customer calls to report the smell of natural gas, we immediately dispatch a serviceperson to respond to the call. Additionally, our Supervisory Control and Data Acquisition (SCADA) system remotely monitors natural gas system pressures, flows and operating conditions from hundreds of locations around PSE's service area, allowing our system operators to monitor the system in real time.
- **Damage Prevention and "Call Before You Dig" Programs:** The damage prevention program establishes procedures for obtaining prompt notice and information concerning excavation activities in the vicinity of the natural gas system. PSE employs public improvement inspectors who are constantly in the field ensuring third-party construction projects do not affect our natural gas infrastructure. Furthermore, we actively promote the "Call Before You Dig" program, which requires contractors and homeowners to call 811 for free underground utility locates two business days in advance of excavation activities to decrease the likelihood of damage to pipelines during construction.
- **Inspection and Maintenance Program:** The system is regularly inspected for leaks, as well as proper functionality of valves, pressure regulation equipment and cathodic protection systems, among other things. We inspect each pipeline on a regular cycle. Please see the below chart for examples of PSE's inspection schedule depending on pipeline type. We also regularly patrol our pipeline corridors to look for leaks, construction activities, or other factors that could affect the safety and operation of the system.



A representative from PSE's locate service shows a customer where underground utilities are located on his property.

Type of Pipeline	Inspection Schedule
Transmission	Annually
Cathodically protected steel and plastic	Every five years. PSE inspects every three years.

Note: These examples are related to design and construction of high pressure pipelines. Requirements vary based on pipeline pressure.