

What Is a Natural Gas Transmission Pipeline?

A natural gas transmission pipeline is used to transport large volumes of natural gas over long distances to major markets. Natural gas is introduced into a pipeline transmission system at various points such as liquefied natural gas (LNG) terminals, processing plants near supply fields, and interconnections with other natural gas transmission pipelines. Natural gas is then compressed to make it move at high pressure through the pipelines.

Transmission pipelines deliver natural gas to local distribution companies, which distribute the product through their regional or municipal networks to homes and businesses for heat and energy. The transmission pipeline also delivers natural gas directly to large industrial end-users, including electric generating facilities. There are presently more than 300,000 miles of natural gas transmission pipelines across the United States.

By definition, an interstate transmission pipeline crosses one or more state boundaries. The U.S. Department of Transportation exclusively governs the safety standards for the design, construction, and operation of an interstate transmission pipeline. The interstate pipeline can only be constructed and operated after receiving a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission.

The pipeline is built of high-strength carbon steel and is coated with fusion-bonded epoxy, a corrosion-resistant, nonconductive resin that forms a waterproof seal around the pipe. Coating on the entire pipeline is electronically inspected before the pipeline is placed into the ground.

During construction, pipe sections, approximately 40 feet in length, are welded together, then visually inspected and nondestructively tested to verify the integrity of the weld. The pipeline is cathodically protected when it is placed in the ground. Cathodic protection is the process of applying a safe, low voltage direct current to all surfaces of the pipeline to prevent corrosion. A grounding system is installed to protect the pipeline in areas where it parallels high-voltage electric power lines.

As an additional safety measure, the pipeline is hydrostatically tested at high pressure before being placed

into service. During hydrostatic testing, the pipeline is filled with water and pressurized to levels greater than the maximum allowable operating pressure. The test pressure is maintained for a minimum of eight hours to confirm the integrity of the pipeline.

Our pipelines are generally installed with a minimum of three feet of cover on top of the pipe. One foot below natural grade, we install a bright yellow warning ribbon reflecting the location of the pipeline to notify potential excavators.

When initially siting the pipeline, we determine the project requirements and obtain as much information as possible from detailed mapping and other data sources that depict existing utility corridors, sensitive environmental areas, residences and other land uses. We use these resources to develop a study corridor and then contact landowners along the corridor to request permission to survey their properties. The surveys allow us to locate specific environmental and cultural resources as well as significant land features or structures which further define the pipeline routing within the study corridor.

