



Inside a natural gas compressor station

Compressor stations ensure the optimal flow of natural gas along pipeline systems. Over distance, friction and elevation differences slow the natural gas and reduce pressure, so compressor stations give the natural gas a boost.

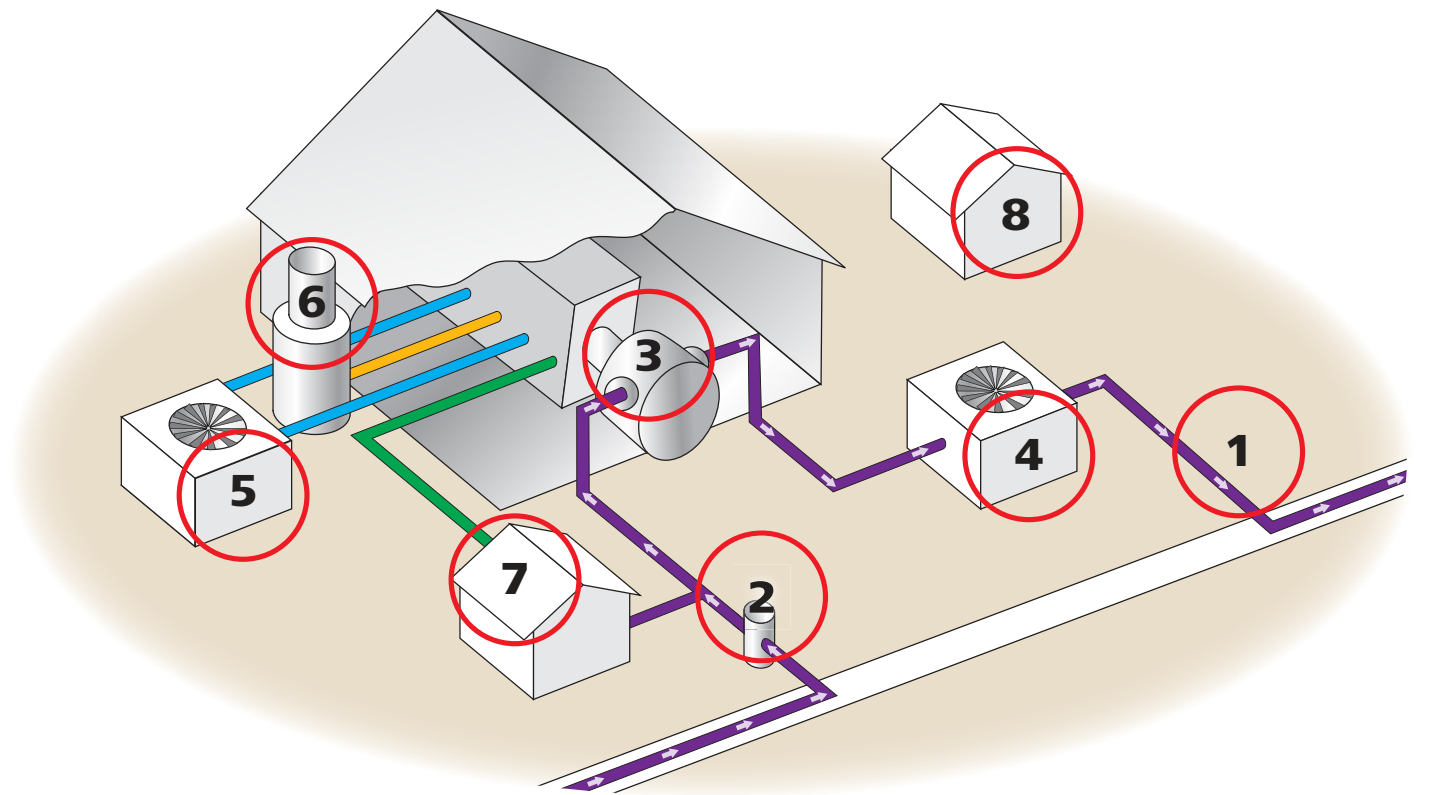
Safety Systems

Compressor stations integrate a variety of safety systems and practices to protect the public, and station employees and property. For example, every station has an emergency shutdown system that stops the compressor units, then isolates the compressor station piping and releases the natural gas from the station into the atmosphere in a safe and controlled manner.

Regulations require that compressor stations periodically test or perform maintenance on the emergency shutdown system to ensure reliability. During the emergency shutdown, natural gas in the pipeline is routed around the station.

Personnel

All compressor stations are monitored – and some are even controlled remotely – by highly trained personnel at a centralized gas control center. Experienced personnel operate and maintain the station equipment and pipelines.



Key components

A typical compressor station consists of yard piping and compressor unit(s), a gas or electric power source, safety systems and personnel, all working together for the safe and efficient transmission and storage of natural gas.

Paragraph numbers below correspond with the numbers in the illustration.

1. Station yard piping

Station yard piping moves natural gas between the pipeline and compressor station.

2. Filter separators/scrubbers

Filter separators or scrubbers remove any solids or liquids from the natural gas that enters the compressor station before injection into the wells.

3. Compressor units

Compressor units sufficiently boost the pressure of the natural gas to move the required volumes of gas to and from the storage reservoir and the interstate pipeline system.

4. Gas cooling system

When natural gas is compressed, its pressure and temperature increase. The natural gas is cooled before its return to the pipeline to protect the pipeline's inner coating.

5. Lube oil system

Compressor units have lube oil systems to lubricate, cool and protect the moving parts.

6. Mufflers (exhaust silencers)

Mufflers decrease the volume level of compressor units to meet federal standards.

7. Fuel gas system

At most stations, the compressor units are fueled by natural gas from the pipeline, though some are driven by large electric motors.

8. Backup generators

Backup generators stand ready in case of an electrical outage.

9. Gas heaters (not shown)

The three large horizontal cylinders at the station are natural gas heaters used during withdrawal service. When natural gas is moved from the storage field or cavern at high pressure, it must be heated prior to reducing the pressure for injection into the interstate pipeline system.

10. Dehydration system (not shown)

Natural gas from the storage field or cavern may contain water vapor from below ground storage. During withdrawal service, the dehydration system removes this excess water vapor and restores the natural gas to interstate pipeline quality standards. The wastewater is collected for proper disposal at offsite commercial facilities.