

# NATURAL GAS COMPRESSOR STATIONS

We're a team of 7,000+ energy problem solvers working to safely move, generate and store the energy North America relies on.

Our 58,100-mile network in the U.S., Canada and Mexico safely transports approximately 30 per cent of the natural gas required to meet energy demand to heat and cool homes and businesses, generate power and fuel industries across the continent every day.

## About compressor stations

Compressor stations provide the energy needed to move natural gas through pipelines.

As natural gas flows through a pipeline, it loses energy due to friction with the pipe, resulting in a drop in pressure along the length of the pipeline. To keep the gas flowing at the desired flow rate, it is necessary to mechanically re-pressurize the gas at compressor station locations along the pipeline.

The location and number of compressor stations needed on a pipeline system is dependent on the operating pressure of the pipeline, the diameter of the pipe, elevation changes along the pipeline route and the volume of gas transported.


## We take safety seriously

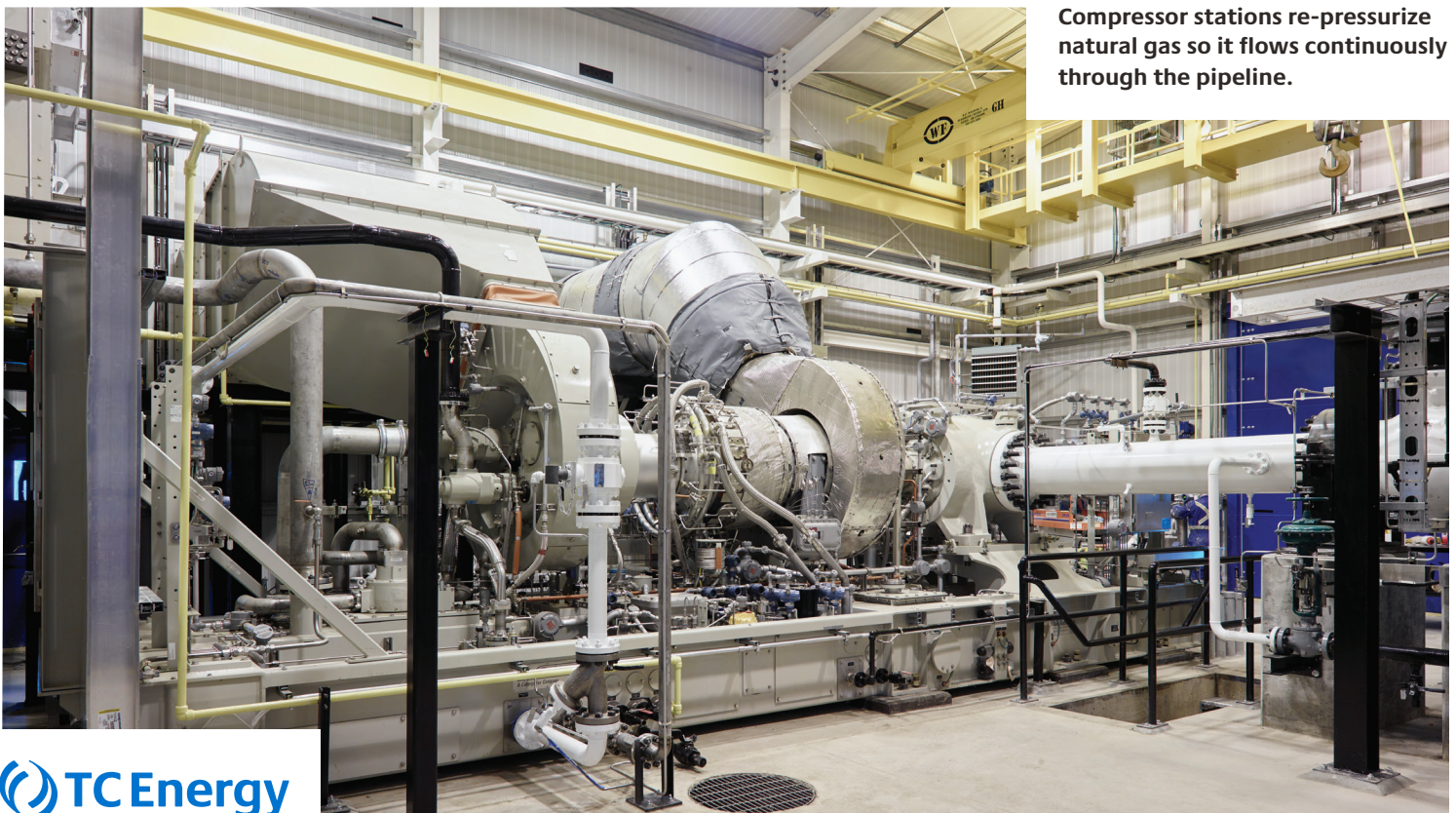
Safety is the first consideration in planning and constructing a compressor station. Several safety systems are built into the stations to ensure the safety of the facility, our employees, our neighbors and the environment.

All our pipelines and facilities are monitored 24/7 for any irregularities. When a potentially hazardous abnormality is recognized, the system can be shut down or adjusted remotely from our Operations Control Centers, or in some cases, automatically.

## Remotely operated and monitored

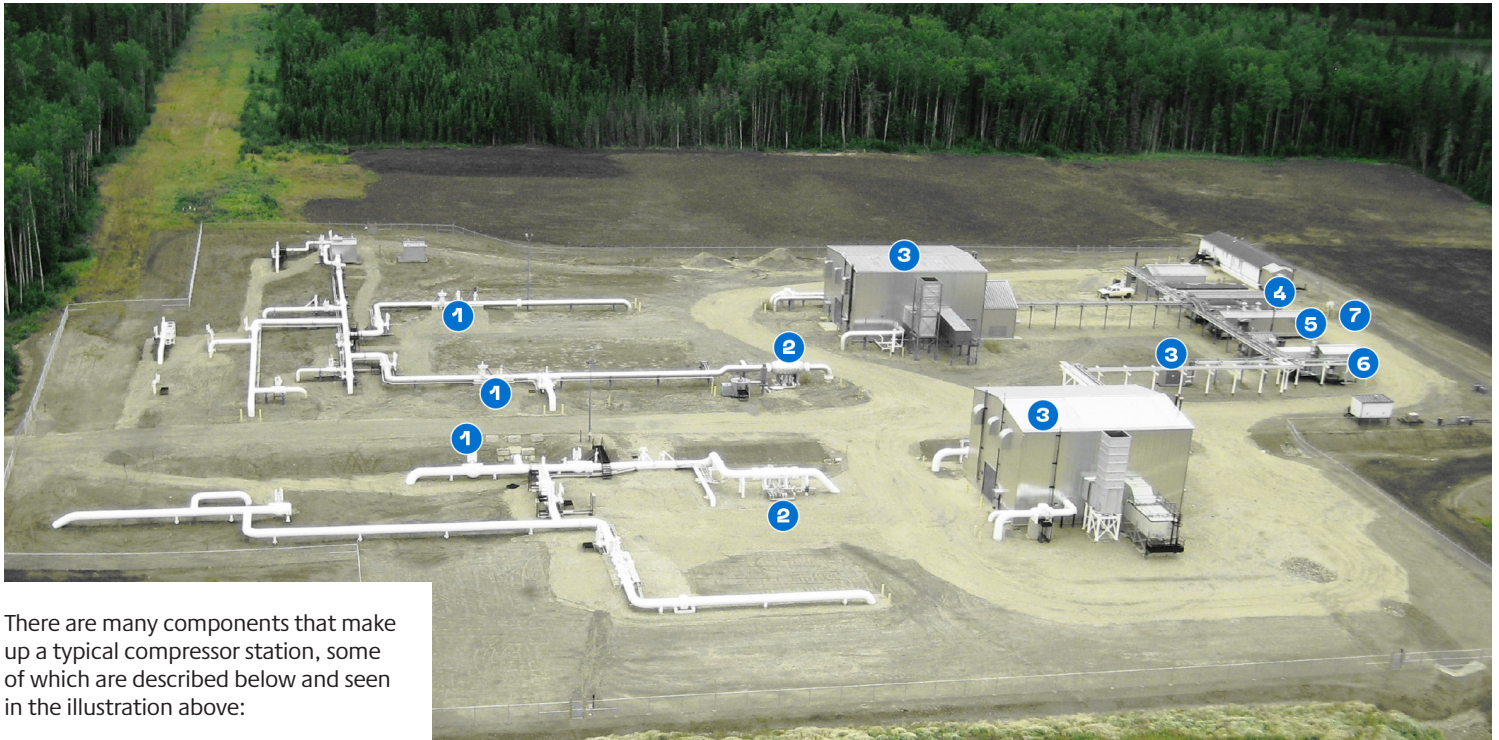
Compressor stations are designed to be remotely operated in a safe and efficient manner. There is no requirement for employees to be on site during normal operations, although all sites are checked regularly by operations personnel who monitor, inspect and maintain the equipment. Processes are continuously monitored by our centralized Operations Control Centers and staff will respond quickly to the site, if required. A typical compressor station includes all the equipment illustrated here.

 **Our compressor stations are equipped with control systems that operate, monitor and control the station based on instructions sent from operators at our Operations Control Centers.**



**Compressor stations re-pressurize natural gas so it flows continuously through the pipeline.**





There are many components that make up a typical compressor station, some of which are described below and seen in the illustration above:

### 1. Yard piping and valves

Yard piping brings natural gas from the pipeline to the compressor station and then back to the pipeline after it has been compressed.

### 2. Station natural gas scrubber

As natural gas enters the compressor station, it passes through a natural gas scrubber vessel which removes any liquid, dirt or other particles from the natural gas. Anything removed from the natural gas is stored on site in a holding tank for processing or disposal.

### 3. Compression

At the heart of any compressor station are devices that work together to provide the energy necessary to move natural gas through the pipeline. Depending on the station configuration and energy source, the power is provided by an engine – either a turbine like those found on jet airplanes or a reciprocating engine that operates much like the one in an automobile. That power is transferred to a compressor which uses an impeller (much like a fan) to push the gas down the line.

### 4. Telecommunications

Compressor station equipment communicates with TC Energy’s Supervisory Control and Data Acquisition (SCADA) system. The SCADA system is connected to TC Energy’s Operations Control Centers located across North America, that continually monitor our pipeline system. All natural gas received on the pipeline is monitored to ensure it meets TC Energy gas quality specifications. These are defined in the gas transportation tariff that is filed with the regulator. Pressurized air is taken from an air compressor and is used throughout the site as part of the control system for instrumentation, valves and for service air tools.

### 5. Generators

Electric generators powered by natural gas are located at all TC Energy compressor stations. In instances where utility power is not available, the generator is the primary power source for the compressor station.

### 6. Uninterruptible power supply (UPS)

A UPS is installed at all stations to provide ongoing power in the event of a power disruption. It is designed to provide sufficient time for personnel to respond to the station, while continuing to remotely operate and control the station’s operations.

### 7. Utility gas building

Typically, the fuel that powers the turbine or reciprocating engine is natural gas taken from the pipeline. In some instances, electric motors provide power.

**Contact us**

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