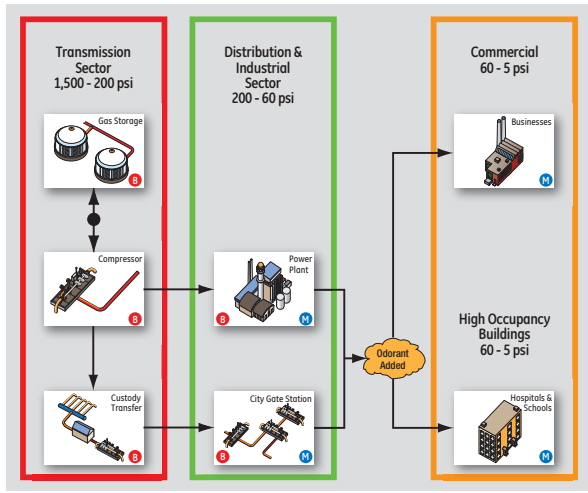
Becker* Products Line Break Protection System

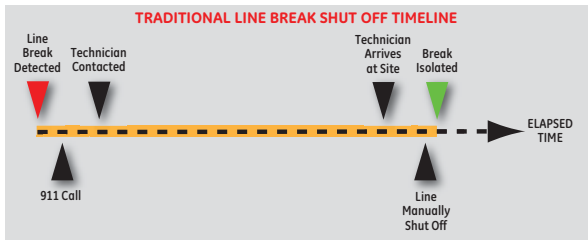
To efficiently and effectively monitor your pipelines, you need the high reliability and quick response of GE's Becker Line Break protection system. The Becker system from GE can automatically sense a broken line and isolate it in a matter of minutes , making it ideal for higher pressure applications within the transmission, distribution and industrial sectors.

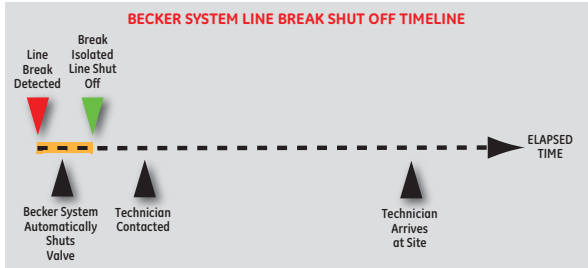
The challenges of line break detection

- Line breaks in natural gas systems happen for numerous reasons:
- Natural forces
- Defective welds
- Pipeline corrosion
- Increased flow volumes
- Equipment failure
- Excavation accidents

Figure 1 - An automated line break system from GE was retrofit to a buried 24-inch (610 mm) ball valve and has been successfully protecting a major North American transmission pipeline for several years. The Becker Line Break protection system can be retrofit to all valve styles including globe, gate and ball.





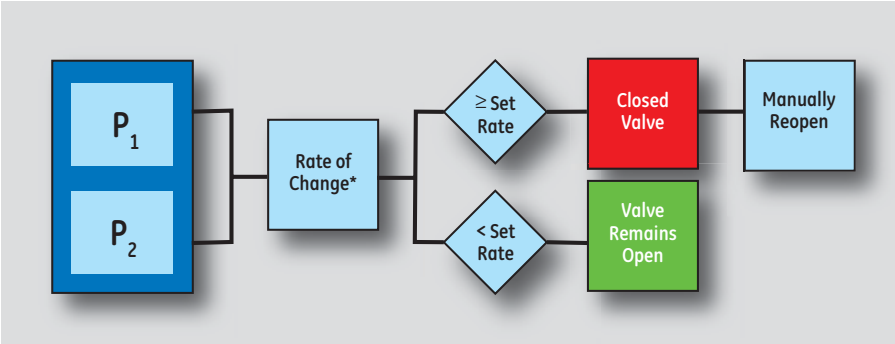


It can be difficult to identify a line break, however. Manually surveying long pipelines – particularly those constructed in a vast desert or other remote location – just isn't practical.

Additionally, pipelines are buried, and higher pressure systems usually do not use an odorant additive, making breaks almost impossible to detect. Odorant is generally added to the pipeline further upstream, putting your high pressure, upstream systems at greater risk.

If a break is identified, manual shutdown can take an average of 30 to 40 minutes. Personnel may not be able to quickly get to the site, may not be equipped with the proper equipment, or may not be adequately trained to handle the critical situation.

[1] Time to close depends on preset pressure drop rate



*Rates can be set from ½ psi/min to 50 psi/min.

Automatic Line Break Sensing System

Actuators equipped with automatic line break protection use a sensing system to quickly detect a continuous drop in pipeline pressure by comparing the differential between the sensing line pressure (P1) and a high pressure reference tank (P2) as a rate of time. Upon the failing sensing pressure rate, the actuator is signaled to close the valve. As a safety precaution, the valve will remain closed until manually reset – isolating the section involved and allowing for easy identification of the ruptured source.

Fast Response is Critical

No longer be exclusively dependent on manual shutdown.

In an emergency, every second is critical and personnel may not be able to get to the site quick enough, be equipped with the proper equipment or adequately trained to handle the situation.

Additional Protection

This automatic system can be configured for use in additional safety management applications such as:

- Overpressure protection
- Underpressure protection
- Seismic protection
- Temperature monitoring and control

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