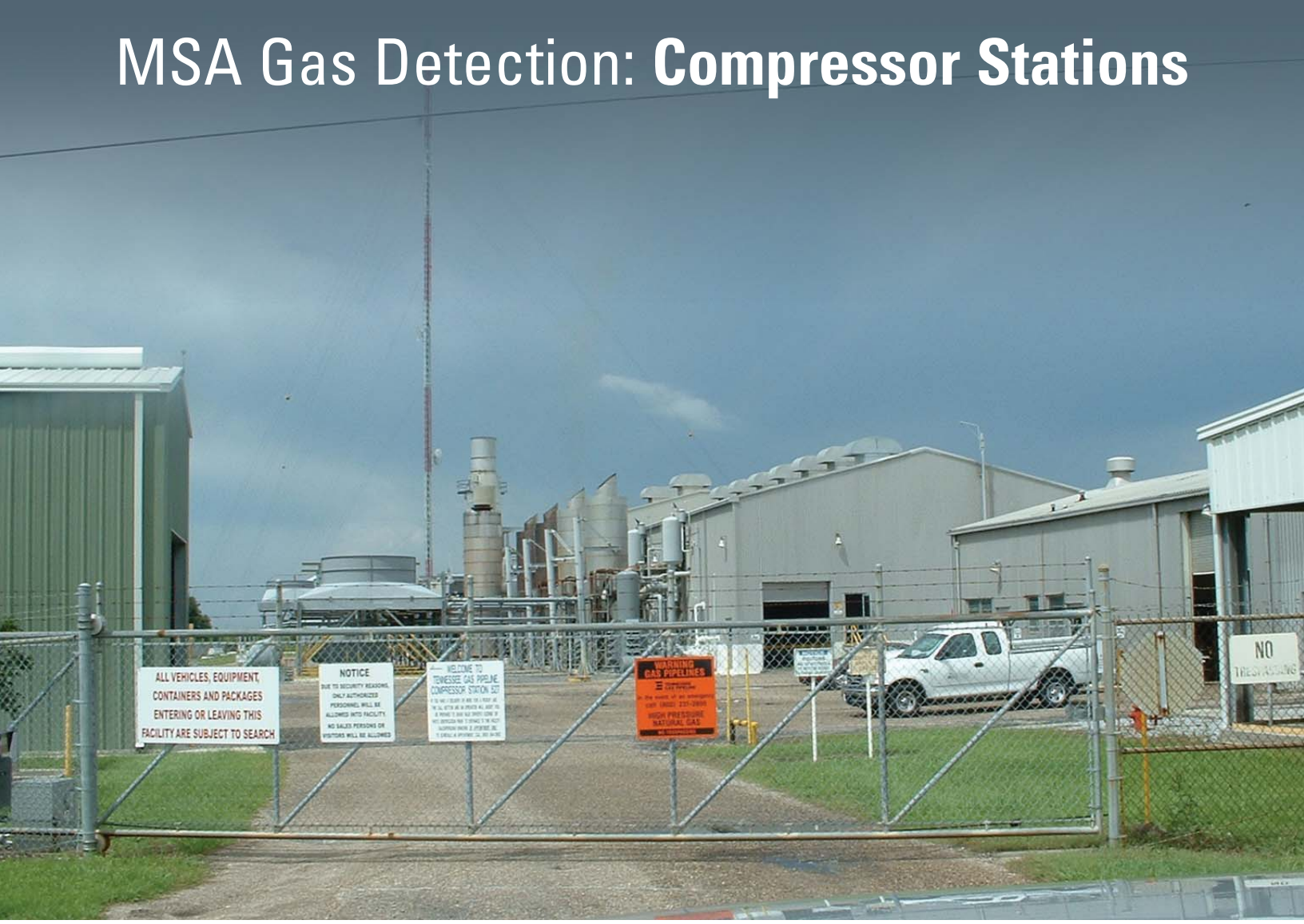
MSA Gas Detection: **Compressor Stations**



Situation

Gas transmission pipelines carry compressed natural gas from onshore and offshore gas production facilities to customers who may be as far as 2000 miles away.

Very large compressors located inside buildings along gas transmission pipelines are used to move natural gas from production facilities to distribution and then on to customers. Multiple pipelines mounted side by side with 30" to 48" diameter piping run in and out of these compressor stations to supply the gas. These compressor stations receive the gas at pressures between 200 to 500 psig, compress it back up to 1000 to 1440 psig, and send it further up the pipeline system to yet another compressor station. Facilities using the newest technology will consist of a single large gas turbine compressor. Older facilities use many piston-driven compressors within one building. There are over 600 compressor stations in use in North America today.

Solution

The single large gas turbine compressor inside a building normally requires mounting 4 MSA FlameGard® IR3 Flame Detectors within the 4 corners of the building, slightly higher than the compressor, so that all sides of the unit can be seen.

Effective and efficient gas detection consists of 2 to 4 points of infrared or catalytic sensors remote-mounted above the compressor to detect rising gas levels if a leak occurs. MSA's Ultima® X Gas Monitor transmitter is normally located on the side wall of the building, allowing maintenance personnel to read and perform remote testing and calibration.

The older design of 4 to 12 engine-driven compressors requires 2 flame detectors and 1 gas detector per compressor. The 2 FlameGard IR3 Flame Detectors should be located on the opposite end and sides, slightly above each compressor. Infrared or catalytic sensors should be remote-mounted above the compressor to detect localized gas leaks. As with single turbine compressors, the Ultima X Gas Monitor transmitter is usually located on the side wall of the building for maintenance and calibration. A 10-compressor building would typically require 20 flame detectors, 10 to 15 gas detectors, and 1 Suprema® Control System.

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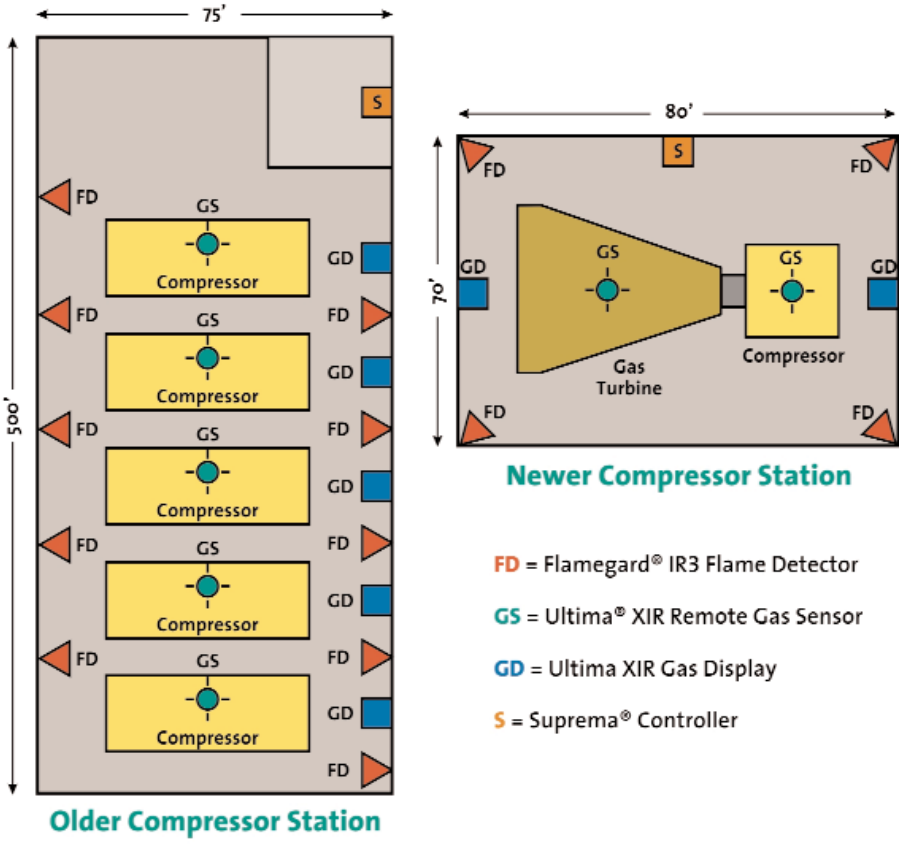
Natural Gas Pipeline Compressor Station



MSA Recommended Equipment

Ultima® XIR Remote Gas Sensor

Safeye® Open Path Gas Detector

Flamegard® IR3 Flame Detector

Suprema® Controller

Product Descriptions

MSA's Flamegard IR3 Flame Detector is an extremely sensitive self-contained instrument that incorporates patented triple IR sensor technology. This rugged 316 stainless-steel stand-alone unit detects virtually any hydrocarbon fire—including natural gas (LNG), town gas, liquefied petroleum gas (LPG), and hydrocarbon gases, and it is highly immune to false alarms. Other convenient features include onboard relays, sensitivity selection, and built-in test capabilities.

The Suprema® Control System offers the new standard in flame- and gas-detection technology through modular redundancy for the monitoring of 4-20mA output sensors, smoke detectors, heat sensors, and manual alarm call points. Offering signal processing for up to 256 inputs and 512 outputs per controller, this intelligent safety system is field-configurable and provides a distributed bus technology architecture to ensure failsafe internal data transfer. Units carry ATEX safety approvals and TUV approval for up to SIL3 systems and CUL.

For more information on these MSA products for terminal bay applications, go to www.msanet.com for bulletin# 07-2078, MSA Flame and Gas Detection for the Oil, Gas, and Petrochemical Industries.

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