

Emissions Reduction

Due to recent EPA rulings, many natural gas transmission compressor station operators have recognized the need to enhance their assets to reduce emissions. Companies have weighed the cost of purchasing and installing new units against upgrading existing facilities. At times, these companies have found it more economical and less time consuming to perform the upgrades.

EN Engineering has extensive experience with compressor stations, including the design and coordination of the installation of emission reduction systems, as well as the associated facility modifications.



Clean Burn of Reciprocating Units

EN Engineering's team of compressor experts coordinate with equipment vendors to perform the on skid upgrades. The units typically require upgrades to turbo systems, reducing the amount of emissions in the exhaust stream. Modifications to these units include:

- Upgraded oil and water cooling systems
- New intake and exhaust stacks and foundation support systems
- Enhanced fuel gas systems with ultrasonic metering

Selective Catalytic Reduction (SCR)

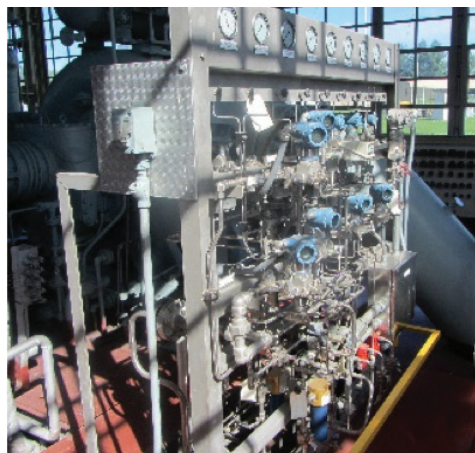
Our engineering professionals have completed a number of projects, including the installation of various SCR systems on legacy turbine-centrifugal packages. These systems utilize various forms of ammonia injection to reduce exhaust stream emissions. EN Engineering design services encompass the installation of components for the SCR systems associated with the existing unit, such as:

- Ammonia tanks, loading and unloading skids, pumps skids, buildings, and detection systems
- Ammonia vaporizer skids including metering, safety facilities, power and control
- Integration of system control and monitoring with existing station control system and gas control facility monitoring



Dry Seal Gas Conversions

EPA rulings have dictated that existing wet seal system emissions on centrifugal packages be reduced by 95 percent. Typically, flaring and reprocessing of the fugitive emissions is less advantageous than installing a dry seal gas system. Our experienced engineering professionals have completed numerous conversions with the installation of new dry gas seal panels, electric and pneumatic booster pumps, and integration of new and existing seal transmitters into the unit and station control systems.



Auxiliary System Analysis and Modifications

EN Engineering will complete all necessary upgrades and modification designs related to associated auxiliary systems affected by the emissions reduction efforts.

- Air system upgrades, new air compressor packages, dryers, reservoirs, control, and sequencing
- Cooling water and oil upgrades via cooler additions, pump systems, control and power systems
- Fuel gas system upgrades with metering, regulation, and heating

Engineering and Design Integration

EN Engineering offers a full complement of engineering and design capabilities in order to upgrade existing facilities to meet ever-increasing EPA emissions regulations. EN Engineering team members are experts in:

- Foundation design, including all types of deep foundations and within challenging environments
- Mechanical piping and equipment specifications, as well as the design for all types of emissions-related materials and facilities
- Instrumentation and monitoring equipment modifications
- Emissions reduction upgrades integration into existing unit and station control systems

