



Description Refer to the Pipeline Specific Operations Manual for specific Compressor Station Operating Procedures.

Regulatory Applicability

- Regulated Transmission Pipelines
- Regulated Gathering Pipelines (Type A)
- Regulated Gathering Pipelines (Type B)
- Regulated Distribution Pipelines

Frequency As needed

Reference 49 CFR 192.605(b)(7) *Procedural Manual for Operations, Maintenance and Emergencies*
LA Title 43 Part XIII 2705(b)(7) *Procedural Manual for Operations, Maintenance and Emergencies*

Forms / Record Retention None / 1 Year

Related Specifications None

OQ Covered Task 0441 *Compressor Start-up and Shutdown-Manual*

(In order to perform the tasks listed above; personnel must be qualified in accordance with West Texas Gas's Operator Qualification program or directly supervised by a qualified individual.)



Procedure Steps

This procedure establishes the requirement for written instructions for starting, operating, and shutdown of natural gas compressor units and contributes to compliance with DOT Regulations 192.605(b)(7). It requires similar written instructions for all other complex equipment systems.

General

1. During start up, the maximum allowable operating pressure or MAOP of any piping shall not be exceeded.
2. During normal operation, the maximum allowable operating pressure or MAOP of any piping shall not be exceeded.
3. The operating speed on any reciprocating or centrifugal engine shall at no time exceed the manufacturer's maximum rated speed.
4. Simple equipment such as air compressors without external lube, or small pumps which are not part of a complex system, do not require written instructions.
5. Written procedures will contain pertinent manufacturer's instructions, and local station directives applicable to starting, operating, and shutting down of all pumps, compressor units, auxiliaries, and compressor station equipment. The location, together with local management, may add other checks to the procedures as suggested by experience.

Procedures

1. Develop written, detailed instructions for starting, operating, and shutdown of natural gas compressor units and other complex equipment prior to initial start-up. Assemble the instructions in a durable format or container to allow easy readability and to prevent damage or fading. Display applicable instructions prominently near the starting controls of each item of equipment.
2. Revise instructions as necessary to accommodate changes in equipment or operating conditions. Replace instructions when they become unreadable or damaged.
3. Take the following actions prior to starting any compressor unit or other complex equipment:
 - a. Notify all personnel to the immediate vicinity of the compressor unit or other complex equipment that is about to be started.
 - b. Ascertain that:
 - i. All critical operating variables such as suction and discharge pressure are within the safe limits of the units.
 - ii. All critical Compressor Station operating variables such as operating pressures, fluid levels, flow rates, and solution concentrations are within safe limits of the plant facilities.
 - iii. All personnel are clear of the equipment to be started.



- iv. All applicable valves are properly positioned for starting and operating.
 - v. All applicable safety alarm and shutdown devices are properly set to function.
 - vi. All electrical switches required for the starting sequence are properly positioned.
 - vii. Review all critical operating variables to assure that variables are within acceptable limits.
4. Follow detailed instructions for operating the equipment after it has been started to assure that the equipment is, at all times, within safe operating limits. In addition to those instructions, adhere to the following requirements:
- a. On all manually operated installations, daily operating log sheets shall be filled out with the critical operating variables noted and recorded on the log sheet or electronic record, at prescribed time intervals throughout the normal work hours
 - b. On all automatically controlled installations, the attendant shall periodically check all operating variables such as suction and discharge pressures, lube oil pressures, end temperatures, cooling water temperatures, fluid levels, flow rates, solution concentration and etc. during normal shift;
 - c. On all unattended installations, periodically check operations via SCADA equipment from remote location.
 - d. Unattended installations shall be equipped with sufficient alarm and shutdown devices to shut down the installation any time an operating variable exceeds the maximum safe limit set by design limitations or the equipment manufacturer. If an operating variable is noted to be approaching a safe limit, every effort shall be made to correct this situation before the variable exceeds the safe limit.
 - e. If any equipment cannot be maintained within safe operating limits or is malfunctioning to the extent that a potential hazard to personnel or property exists, it shall be shut down, and the reason for malfunctioning determined and corrected before initiating a restart.
5. Follow detailed instructions when shutting down a compressor or pumping unit or other complex equipment to assure that unsafe operating limit or potential hazard to personnel or property is not encountered during the shutdown.
- a. Reciprocating unit need not be blown down.
 - b. Where applicable, fuel and starting gas valves to the compressor engine shall be closed and maintained in a closed position until ready to start engine.
 - c. The compressor suction, discharge, and by-pass valves shall be positioned as outlined in the written operating procedures for shutdown.
6. Follow detailed instructions when removing liquids from station piping to assure that potential hazard to personnel or property is not encountered during liquid removal.



- a. Ensure all personal have been notified and no work is being performed at the station tank.
- b. Verify the location of the valve to be used for liquid removal.
- c. Slowly open valve just far enough to achieve flow. Do not leave the valve unattended.
- d. Close valve when liquid removal is completed.
- e. Operating a vehicle in the proximity of the liquids tank during liquids removal is prohibited.

Records

1. Compressor station daily log sheets or a SCADA operating log shall be completed as applicable.
2. Gas compressor log sheets, at manned units, shall include suction and discharge temperatures and pressures. Retain these records for 12 months.
3. Use an electronic scheduler if available to ensure start-up and shutdown instruction reviews. If no electronic scheduler is available, the time intervals for these reviews are to be determined by the personnel in charge of the compressor station.