

SUMMARY OF REQUIREMENTS FOR PROCESSES AND EQUIPMENT AT NATURAL GAS PROCESSING PLANTS

Natural gas processing plants remove impurities from “raw” gas to prepare it for use by industrial and residential for the pipeline. Equipment and processes at natural gas processing plants may be covered by requirements under the New Source Performance Standards (NSPS) for volatile organic compounds, and the National Emissions Standard for Hazardous Air Pollutants (NESHAP) for oil and natural gas production. EPA has made a number of changes to these final rules based on public comments.

NSPS Requirements for New and Modified Compressors

- Compression is necessary to move natural gas along a pipeline. The final rule will reduce VOC emissions from two types of compressors: centrifugal compressors and reciprocating compressors.
- The final rule establishes requirements for two types of compressors that may be used at gas processing plants located between the wellhead and the point at which gas enters the transmission pipeline:
- **Centrifugal compressors** - Centrifugal compressors are equipped with either wet seal systems, or dry seal systems.
 - Compressors with wet seals use oil as a barrier to keep gas from escaping. The gas that becomes absorbed in the oil is continuously vented, along with the VOCs and air toxics it contains. The final rule requires a 95 percent reduction in VOC emissions from compressors with wet seal systems. This can be accomplished through flaring, or by routing captured gas back to a compressor suction or fuel system.
 - EPA sought comments on the proposed requirements for compressors using dry seal systems, which have low VOC emissions. As a result of those comments, today's final rule does not apply to compressors using dry seals, meaning these compressors are not “affected facilities.” EPA encourages owners/operators to use compressors with dry seal systems where possible.
- **Requirements for reciprocating compressors** – Today's final rule requires the replacement of replace rod packing systems in reciprocating compressors. Over time, these packing systems can wear, leaking gas and VOCs.
 - The rule provides two options for replacing rod packing:
 - Every 26,000 hours of operation (operating hours must be monitored and documented); or
 - Every 36 months (monitoring and documentation of operating hours not required).

- Today's rule also includes requirements for initial performance testing, recordkeeping and annual reporting.
- The compliance date for compressors is at initial startup, or 60 days after the final rule is published in the Federal Register, whichever is later.

NSPS Requirements for New and Modified Pneumatic Controllers

- Pneumatic controllers are automated instruments used for maintaining a condition such as liquid level, pressure, and temperature at wells and gas processing plants, among other locations in the oil and gas industry. These controllers often are powered by high-pressure natural gas and may release gas (including VOCs and methane) with every valve movement, or continuously in many cases as part of their normal operations.
- The final rule affects continuous-bleed, gas-driven controllers located at gas processing plants. The VOC emission limit for these controllers is zero.
- The final rule includes exceptions for applications requiring high-bleed controllers for certain purposes, including operational requirements and safety. The rule also includes requirements for initial performance testing, recordkeeping and annual reporting.

Leak Detection and Repair Requirements

- The final regulations strengthen the leak detection and repair requirements that apply to existing natural gas processing plants. The compliance date for new sources for this requirement is 60 days after the final rule is published in the Federal Register; existing sources covered by the air toxics rule have an additional year to comply.

Sulfur Dioxide (SO₂) Requirements for New & Modified Sweetening Units

- A sweetening unit is removes sulfur from natural gas. Today's final rule strengthens the previous standards by requiring sweetening units at natural gas processing plants to reduce SO₂ emissions by 99.9 percent. This requirement applies to units with a sulfur production rate of at least five long tons per day.

Requirements for Storage Vessels at Natural Gas Processing Plants

- Storage tanks at natural gas processing plants generally are used to store condensate. These tanks may be subject to two standards: the NSPS for VOCs; and the major source air toxics standards (NESHAP) for Oil and Natural Gas Production.
- **NSPS requirements:** New storage tanks with VOC emissions of 6 tons a year or more must reduce VOC emissions by at least 95 percent. EPA expects this will generally be accomplished by routing emissions to a combustion device.
 - To ensure enough combustion devices are available to meet this requirement, the final rule provides a one-year phase-in for this requirement.

- **Air toxics requirements:** In response to public comments, EPA did not finalize proposed air toxics standards for storage vessels *without* the potential for flash emissions, which currently are not regulated under the NESHAP for Oil and Natural Gas Production. The agency determined that it needs additional data in order to establish emission standards for this type of storage vessel. The previous standards for storage tanks *with* the potential for flash emissions remain in place.

Air Toxics Requirements for Glycol Dehydrators

- Glycol dehydrators, used to remove water vapor from gas, are subject to one of two air toxics standards, depending on their location. Dehydrators located at natural gas processing plants are subject to the NESHAP for Oil & Natural Gas Production.
- Today's rule retains the existing standards for large glycol dehydrators and sets new standards for small glycol dehydrators. A glycol dehydrator is used to remove excess water vapor from natural gas.
 - **Large dehydrators:** The final rule also retains the existing the 1-ton-per year benzene compliance option for large glycol dehydrators, meaning operators may reduce benzene emissions from large dehydrators to less than 1 ton per year as an alternative to reducing total air toxics emissions by 95 percent.
 - **Small dehydrators:** A dehydrator is considered small if it has an annual average natural gas throughput of less than 85,000 standard cubic meters per day, or actual annual average benzene emissions of less than 1 ton per year.
 - Both existing and new small glycol dehydrators must meet a unit-specific limit for emissions of BTEX (benzene, toluene, ethylbenzene and xylene) that is based on the unit's natural gas throughput and gas composition. The limit is determined by applying a formula set out in the final rule.
- New small glycol dehydrators must comply with the air toxics requirements immediately upon startup or within 60 days after the final rule is published in the Federal Register, whichever is later. Existing small glycol dehydrators must comply within three years after the effective date of the rule. A small glycol dehydrator is considered existing if construction or reconstruction began before Aug. 23, 2011.
- Today's rule applies only to sources that are considered "major sources" of air toxics. A major source emits 10 or more tons of a single air toxic or 25 tons or more of a combination of toxics in a year.

MORE INFORMATION

- For summary information on requirements for other types of facilities, or to read the final rules, visit www.epa.gov/airquality/oilandgas