

## NSPS Subpart KKK “Process Unit” Definition

- NSPS Subpart KKK applies to affected facilities at onshore natural gas processing plants that commence construction, reconstruction, or modification after January 20, 1984. A compressor in VOC service or in wet gas service is an affected facility and the group of all equipment except compressors within a process unit is an affected facility.
- A natural gas processing plant subject to NSPS Subpart KKK shall comply with the reporting and recordkeeping requirements and standards of NSPS Subpart VV. One reporting requirement is that the facility submits semiannual reports to ODEQ including but not limited to “Process Unit Identification”.
- Why does the process unit identification matter?
  - Because in the NSPS Subpart VV standards for valves and closed vent systems, a facility is only allowed to have less than 3% of valves and 3% of closed vent system components designated as difficult-to-monitor or difficult-to-inspect per process unit. Furthermore, if a facility elects to comply with the alternative standards for valves in NSPS Subpart VV they are only allowed to have 2% leaking per process unit. Thus, if a facility designates an entire gas plant as a process unit, they potentially will be allowed to have a greater number of components leaking or designated as difficult-to-monitor because the single process unit would have a greater total number of components.
- Some facilities indicate in their semiannual NSPS Subpart KKK reports that the entire gas plant is the only process unit. It is the position of ODEQ with guidance from EPA Region 6 and EPA’s Office of Air Quality Planning and Standards (“OAQPS”) that this is the incorrect interpretation of the rule.
  - In a technical phone call between ODEQ and EPA Region 6 on July 30, 2009, and in emails sent from EPA Region 6 on October 5, 2009, and November 3, 2009, EPA Region 6 indicated that it is their position that an *affected source* under NSPS Subpart KKK is a process unit, not an entire gas plant. They further state that “...while the NSPS does not clearly define the term process unit, the intent of the regulation is not to conflate the definition of “process unit” with the term “natural gas processing plant”.
  - In an email forwarded from OAQPS by EPA Region 6 on November 5, 2009, OAQPS agreed with the EPA Region 6 above conclusion.
- What does the rule say about a natural gas processing plant?
  - NSPS Subpart KKK defines a natural gas processing plant (gas plant) as “any processing site engaged in the extraction of *natural gas liquids* from *field gas*, fractionation of mixed natural gas liquids to natural gas products, or both.”
  - The Equipment Leaks of VOC in Natural Gas Production Industry - Background Information for Proposed Standards (EPA-450/3-82-024a, PB84-155126, dated Dec. 1983) further states that “This document identified the functions of a natural gas processing plant. Basically, this plant type receives field gas from natural gas fields and performs the following functions as are needed: compression, gas

treating (sweetening and dehydration), separation of gas from liquids for sale of the dry gas, and fractionation of liquid mixtures into liquid components for sale. The plants produce dry natural gas and liquid mixtures for sale and may or may not fractionate liquid mixtures into components for sale. Liquid components are Ethane, Propane, Iso-Butane, Butane, Natural Gasoline, etc...”

- §60.631 states “Natural gas liquids means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from *field gas*.”
  - The November 3, 2009, email from EPA Region 6 provided a EPA Region 8 document that states “The use of “such as” in this definition indicates that this definition is inclusive of the listed hydrocarbons liquids but does not exclude all others. In fact, the definition of *natural gas* liquids found in Frick’s Petroleum Production Handbook, Vol. II, states that NGLs are divided into more specific categories, including: (1) condensate; (2) natural gasoline; and (3) liquefied petroleum gases.”
- What does the rule define as a process unit?
    - NSPS Subpart KKK defines a process unit as “*equipment* assembled for the extraction of *natural gas liquids* from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.”
    - From the Federal Register Publication - Proposed Rule (49 FR 2636, dated 1/20/1984), on page 2638 of this document, the preamble explains what is a “process unit?”
      - “More specifically, a process unit has discrete boundaries that consist of the points where process fluid enters from the preceding natural gas processing activity and where the treated process fluid is discharged to storage or for further processing. For example, a separation train is a process unit because a field gas stream enters the separation train, and separate product gas and natural gas liquids are discharged from the train. if further separation of natural gas liquids is performed by fractionation, the fractionation train comprises an additional process unit. Thus, the process unit is used as the basis for defining an affected facility, but the applicability of the proposed standards is limited to specific equipment in VOC service.”
  - The preamble states that the process unit is used as the basis for defining an affected facility. ODEQ looked at how the rule determined what an affected facility was.
    - Identification of Affected Facilities - Applicability Criteria Rules:
      - §60.630(a)(1): “The provisions of this subpart apply to *affected facilities* in *onshore natural gas processing plants*.”
      - §60.630(a)(2): “A compressor *in VOC service* or *in wet gas service* is an *affected facility*.”
      - §60.630(a)(3): “The group of all *equipment* except compressors (defined in §60.631) within a *process unit* is an *affected facility*.”



- Provide ODEQ with additional information needed to determine compliance with the rule.
  - The information required to be submitted in the NSPS Subpart KKK Semiannual Reports is inadequate to determine compliance. For example, a facility is only required to report leaking components, they are not required to report the total number of components that are monitored therefore ODEQ cannot determine if the facility is properly monitoring all required components.
  - ODEQ is granted the authority to request the additional information through Oklahoma Clean Air Act, 27A O.S. § 2-5-105(17) and the Oklahoma Administrative Code, *Air Pollution Control*, Title 252, Chapter 100-43-7(a).
- ODEQ anticipates conducting outreach sessions for industry on the draft forms before finalizing and publishing.