Detailed description of requirements new EPA requirements addressing emissions from the oil and natural gas industry

San Joaquin Valley Air Pollution Control District

Prepared by Steve Davidson, Air Quality Engineer II

Reviewed by Leonard Scandura, Permit Services Manager

Nov 9, 2012 draft

Introduction

In response to increased hydrocarbon energy production the United States the EPA amended 2 existing NSPS and 2 existing NESHAPS rules and adopted one new NSPS rule targeted at the oil and gas industry. These rules were finalized 4/17/12, and but not published until 8/16/12.

The following new NSPS rule has been adopted:

40 CFR Part 60, Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (constructed, reconstructed, or modified after 8/23/11)

The following NSPS and NESHAPS rules have been amended:

40 CFR Part 60, Subpart KKK—Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

40 CFR Part 60, Subpart LLL—Standards of Performance for SO2 Emissions From Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20,1984, and on or Before August 23, 2011

40 CFR Part 63 subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities

40 CFR Part 63 subpart HHH - National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities

The amendment to NSPS Subpart KKK limits the applicability to units constructed, reconstructed or modified prior to 8/23/11, with NSPS Subpart OOOO applying to units constructed, reconstructed or modified after that date.

The amendment to NSPS Subpart LLL limits the applicability to units constructed, reconstructed or modified prior to 8/23/11, with NSPS Subpart OOOO applying to units constructed, reconstructed or modified after that date.

Below is a detailed description of the requirements of NSPS Subpart OOOO and NESHAPS Subparts HH and HHH and their effect on oil and gas facilities operating within the District.

Also attached are proposed amendments to District BACT guidelines for emission units subject to these new requirements that will resulting the BACT guidelines being no less stringent that the new requirements.

Please note that no new BACT guidelines are proposed for activities associated with natural gas wells as there does not appear to be any new natural gas wells being drilled in the District. As such, there is no need for BACT guidelines covering operations associated with new natural gas wells.

How these new standards are expected to affect operators in the District

As discussed below, several of these new standards affect new gas production operations, where wells are drilled primarily for the production of natural gas. To our knowledge there are no new gas wells being drilled in the District. Therefore, many of these new requirements are not applicable to current operations in the District.

Additionally, revisions to NESHAPS requirements affect operations at oil and gas operations that are also major HAP sources. To our knowledge, there are no oil and gas operation major HAP sources in the District.

As such, the only applicable requirements that are expected to have any applicability on operations in the District are for crude oil/condensate storage tanks, pneumatic controllers at gas plants, and leak standards at gas plants.

**Table of Contents**

NSPS Subpart OOOO regulates VOC and SO2 emissions from the exploration, production, processing, and transportation of oil and gas. These facilities include completion of natural gas wells, compressors, pneumatic controllers, storage vessels and sweeting units.

§60.5375: Natural Gas Well Completions……………………Section 1

§60.5380: Centrifugal Compressors…….……………………Section 2

§60.5385: Reciprocating Compressors………………………Section 3

§60.5390: Pneumatic Controllers………..……………………Section 4

§60.5395: Storage Vessels……………….……………………Section 5

§60.5400: Leak Standards at Natural Gas Processing

Plants ………………………….…………..……………………Section 6

§60.5405: Sweetening Units at Onshore Natural Gas

Processing Plants…….………………………………………….Section 7

NESHAPS Subparts HH and HHH regulate HAPS emissions from oil and natural gas production facilities and natural gas transmission facilities, respectively.

40 CFR Part 63 subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities……….……………..……………………………….….Section 8

40 CFR Part 63 subpart HHH - National Emission Standards

for Hazardous Air Pollutants From Natural Gas Transmission

 and Storage Facilities……………………………..….………. Section 9

Proposed BACT Guidelines…….……………………….……Section 10

Section 1

NSPS Subpart OOOO §60.5375: Natural Gas Well Completions

**Natural gas well completions (§60.5375) and effects within the District:**

NSPS Subpart OOOO requires “Reduced Emissions Completions” (REC) at hydraulically fractured natural gas wells. Natural gas wells are defined as an onshore well that is drilled primarily for production of natural gas.

This rule would affect new natural gas wells that are hydraulically fractured. It does not affect new wells that produce both oil and gas, as is very common in the District.

According to California department of Oil, Gas, and Geothermal Resources document, “ Producing Wells and Production of Oil, Gas, and Water by County – 2010”, Currently there are less than 300 natural gas producing wells in the District with the majority of the wells in Kern (181) and San Joaquin (83) counties. We are not aware of any new natural gas wells being drilled in the District. As such, this section of Subpart OOOO is not expected to affect operators in the District.

A typical REC operation consists of the following: for the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flow line or collection system, re-inject the recovered gas into the well or another well, use the recovered gas as an on-site fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere.

Drilling and hydraulic fracturing of wells is typically performed by a contractor on behalf of the oil/gas producer. The contractor well completions would be subject to this new requirement.

District practice will continue to designate well drilling, servicing, and associated activities as a separate stationary source from the oil production operation for purposes of New Source review.

**Control Requirements (§60.5375)**

Prior to January 1, 2015, operators will be required to perform the following:

1. Capture and control flowback emissions with a control device and
2. Safely maximize resource recovery and minimize releases of gases during flowback and subsequent recovery.

On and after January 1, 2015, operators will be required to perform the following:

1. Install REC to control flowback emissions.
2. All salable quality natural gas shall be routed to the gas flow line as soon as practicable.
3. Capture and control flowback emissions with a control device when REC is not practicable.
4. Safely maximize resource recovery and minimize releases of gases during flowback and subsequent recovery.

Hydraulically fractured low pressure wells, wildcat and delineation wells, will be required to route flowback emissions to completion combustion devices.

There are no requirements for crude oil well completions.

**Key Definitions for Control Requirements (§60.5430):**

* Low pressure gas wells are defined as wells with reservoir pressure and vertical well depth such that 0.445 times static reservoir pressure (in pounds per square inch absolute (psia)) minus 0.038 times the vertical well depth (in feet) minus 67.578 psia is less than the flow line pressure at the sales meter.
* Delineation wells are wells drilled just outside the proved area of an oil or gas reservoir in an attempt to extend the known boundaries of the reservoir.
* Flowback is defined as the “process of allowing fluids to flow from a natural gas well following a treatment, either in preparation for a subsequent phase of treatment or in preparation for cleanup and returning the well to production.” Flowback begins upon refracturing fluids returning to the surface and ends either with the well being shut-in or when the well is producing continuously, whichever occurs first.

**Recordkeeping requirements:**

1. Operator must maintain a daily log for each well completion operation at each gas well affected facility. Log must contain the location of each well, the API Well #, duration of flowback, duration of recovery to the flow line, duration of combustion, duration of venting, and the specific reason for venting in lieu of capture or combustion. Duration of time shall be specified in hours. For hydraulically fractured low pressure wells, wildcat, and delineation wells the duration of recovery to the flow line is not required. (§60.5420 (c) (1) (iii))

**Demonstration of Initial compliance (§60.5410):**

1. Demonstration of Initial compliance begins October 15, 2012 or upon initial startup, whichever is later, and ends no later than one year after October 15, 2012 or initial startup. Initial compliance consists of:
2. Submitting notification to the administrator no later than two days prior to commencement of each well completion. The notification shall include contact information for the owner or operator; the API well number, the latitude and longitude coordinates for each well in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983; and the planned date of the beginning of flowback. You may submit the notification in writing or in electronic format. If you are subject to State regulations requiring advanced notification this requirement is satisfied in full.
3. Submitting initial annual report 30 days after the end of the initial compliance period, per section §60.5420(b), and include the following:
	1. The company name and address.
	2. An identification of each affected facility being included in the annual report.
	3. Beginning and ending dates of the reporting period.
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
	5. Records for each gas well including:
		1. Records identifying each well completion operation for each gas well affected facility.
		2. Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the control requirements listed above.
		3. Records required in the daily operation log or each wildcat, delineation, and low pressure well completion operation conducted for each gas well affected facility that occurred during the reporting period. These records include: the location of the well; the API well number; the duration of flowback; duration of recovery to the flow line; duration of combustion; duration of venting; and specific reasons for venting in lieu of capture or combustion. The duration must be specified in hours of time. For each gas well the facility is required to comply with the requirements for hydraulically fractured low pressure wells, wildcat, and delineation wells, you must maintain the records listed above except that you do not have to record the duration of recovery to the flow line.
		4. For each gas well facility for which you claim as capture and control flowback emissions with a control device when REC is not possible you must record: the location of the well; the API well number; the specific exception claimed; the starting date and ending date for the period the well operated under the exception; and an explanation of why the well meets the claimed exception.
		5. In lieu of submitting records requires by items a) through d) (above). For each gas well facility for which you claim you claim as capture and control flowback emissions with a control device when REC is not possible, you must record: the location of the well; the API well number; the specific exception claimed; the starting date and ending date for the period the well operated under the exception; and an explanation of why the well meets the claimed exception.
		6. In lieu of submitting records for hydraulically fractured low pressure wells, wildcat, and delineation wells required by items a) through b). (above). For each gas well facility for which you claim as capture and control flowback emissions with a control device when REC is not possible, you must record: the location of the well; the API well number; the specific exception claimed; the starting date and ending date for the period the well operated under the exception; and an explanation of why the well meets the claimed exception.
4. A daily log including all records required by the operators daily log listed above for a period of 5 years.
5. For all wells that require capture and control flowback emissions with a control device, the operator must maintain one or more digital photographs, including the date photo was taken and the location latitude and longitude of well site imbedded within, or stored with the digital file showing the equipment for storing or re-injecting recovered liquid, equipment for routing recovered gas to the gas flow line, and the completion combustion device (if applicable) connected to and operating at each gas well completion operation that occurred during the initial compliance period. As an alternative to imbedded latitude and longitude within the digital photograph, the digital photograph may consist of a photograph of the equipment connected and operating at each well completion operation with a photograph of a separately operating GIS device within the same digital picture, provided the latitude and longitude output of the GIS unit can be clearly read in the digital photograph.

**Demonstrate continued compliance (§60.5415):**

1. Submit annual report required above
2. Maintaining records listed above.

**Perform Required Notification (§60.5420):**

 Perform notification as required above

Section 2

NSPS Subpart OOOO §60.5380: Centrifugal Compressors

**Centrifugal Compressors (§60.5370) and effects within the District:**

NSPS Subpart OOOO applies to new centrifugal compressors using wet seals that are located between the natural gas wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

As discussed above, we are not aware of any new natural gas wells being drilled in the District, and therefore there is not expected to be any new centrifugal compressors serving such wells. As such, this section of Subpart OOOO is not expected to affect operators in the District.

Notwithstanding the above, some centrifugal compressors are subject to District Rule 4409 - Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities. Other centrifugal compressors (those associated with heavy oil production) are not subject to Rule 4409. Also, centrifugal compressors associated with equipment that require a permit also are subject to permit requirements, including BACT.

This new NSPS requirement may impose new requirements for facilities installing new centrifugal compressors. However, as noted above, District BACT guidelines will be updated so that compliance with District BACT requirements assures compliance with the emission control requirements of this new NSPS.

**Control Requirements (§60.5380):**

Operator must reduce VOC emissions from each centrifugal compressor wet seal by a minimum of 95.0%.

If a control device is used to achieve 95% VOC reduction, then the wet seal fluid degassing device system must be equipped with a cover that meets the following cover requirements (§60.5411 (b)), be connected through a closed vent system that meets the following system requirements (§60.5411(a)), and be connected to a control device that meets the following control requirements: (§60.5412).

1. Cover Requirements (§60.5411 (b)):
	1. The cover and all openings on the cover shall form a continuous barrier over the entire surface area of the wet seal fluid degassing system.
	2. Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) whenever material is in the compressor on which the cover is installed except during those times when it is necessary to use an opening as follows:
		1. To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);
		2. To inspect or sample the material in the unit;
		3. To inspect, maintain, repair, or replace equipment located inside the unit; or to vent liquids, gases, or fumes from the unit through a closed-vent system to a control device designed.
2. Closed vent system requirements (§60.5411 (a)):
	1. You must design and operate the closed vent system to route all gases, vapors, and fumes emitted from the material wet seal fluid degassing system to a control device that meets the requirements listed below.
	2. You must design and operate the closed vent system with no detectable emissions as demonstrated by the inspection and maintenance closed vent system requirements listed below (§60.5416(b)).
	3. If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, you must comply with one of the following:
		1. You must properly install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device to the atmosphere and is capable of taking periodic readings at the inlet to the bypass device, and sounds an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device to the atmosphere.
		2. You must secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration

Exemption from the closed vent system are as follows: low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices

1. Allowable Control Device Initial Compliance(§60.5412 (a)):
	1. Enclosed combustion device (e.g., thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater) in accordance with one of following performance requirements below (§60.5413):
		1. You must reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater.
		2. You must reduce the concentration of TOC in the exhaust gases at the outlet to the device to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen.
		3. You must operate at a minimum temperature of 760°C (1400°F) for a control device that can demonstrate a uniform combustion zone temperature during the performance test .
		4. If a boiler or process heater is used as the control device, then you must introduce the vent stream into the flame zone of the boiler or process heater.
	2. Vapor recovery device (e.g., carbon adsorption system or condenser) or other nondestructive control device to reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater.
	3. Design and operate a flare in accordance with the requirements of §60.5413.
2. Operation of Control Device Initial Compliance(§60.5412(b)):
	1. Operator shall operate each control device used to comply with this subpart at all times when gases, vapors, and fumes are vented from the wet seal fluid degassing system affected facility, through the closed vent system to the control device. You may vent more than one affected facility to a control device used to comply with this subpart.
	2. For each control device monitored, operator must demonstrate compliance according to the requirements of §60.5415(e)(2).
	3. For each carbon adsorption system (§60.5412(c)) used as a control device, operator shall manage the carbon in accordance with the requirements specified below:
		1. Following the initial startup of the control device, operator shall replace all carbon in the control device with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established according to §60.5413(c)(2) or (c)(3) for the carbon adsorption system. You must maintain records identifying the schedule for replacement and records of each carbon replacement as required in §60.5420(c)(6).
		2. You must either regenerate, reactivate, or burn the spent carbon removed from the carbon adsorption system in one of the units specified below:
			1. Regenerate or reactivate the spent carbon in a thermal treatment unit for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart X.
			2. Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating air emission controls in accordance with this section.
			3. Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating organic air emission controls in accordance with an emissions standard for VOC under another subpart in 40 CFR part 60 or this part.
			4. Burn the spent carbon in a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart O.
			5. Burn the spent carbon in a hazardous waste incinerator which you have designed and operated in accordance with the requirements of 40 CFR part 265, subpart O.
			6. Burn the spent carbon in a boiler or industrial furnace for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 266, subpart H.
			7. Burn the spent carbon in a boiler or industrial furnace that you have designed and operated in accordance with the interim status requirements of 40 CFR part 266, subpart H.

**Inspection and monitoring requirements (§60.5416)**

1. Closed Vent System Requirements -- No detectable emissions test methods and procedures (§60.5416 (b)):
	1. Operator must conduct the no detectable emissions test procedure in accordance with Method 21 at 40 CFR part 60, appendix A-7.
	2. The detection instrument must meet the performance criteria of Method 21 at 40 CFR part 60, appendix A-7, except that the instrument response factor criteria in section 3.1.2(a) of Method 21 must be for the average composition of the fluid and not for each individual organic compound in the stream.
	3. You must calibrate the detection instrument before use on each day of its use by the procedures specified in Method 21 at 40 CFR part 60, appendix A-7.
	4. Calibration gases must be as specified below:
		1. Zero air (less than 10 parts per million by volume hydrocarbon in air).
		2. Mixture of methane in air at a concentration less than 10,000 parts per million by volume.
	5. Operator may choose to adjust or not adjust the detection instrument readings to account for the background organic concentration level. If operator chooses to adjust the instrument readings for the background level, operator must determine the background level value according to the procedures in Method 21 at 40 CFR part 60, appendix A-7:
	6. Detection instrument must meet the following performance criteria:
		1. The detection instrument must meet the performance criteria of Method 21 at 40 CFR part 60, appendix A-7, except the instrument response factor criteria in section 3.1.2(a) of Method 21 must be for the average composition of the process fluid, not each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, or other inerts that are not organic hazardous air pollutants or volatile organic compounds, you must calculate the average stream response factor on an inert-free basis.
		2. If no instrument is available that will meet the performance criteria specified immediately above, you may adjust the instrument readings by multiplying by the average response factor of the process fluid, calculated on an inert-free basis, as described immediately above.
	7. Operator shall determine if a potential leak interface operates with no detectable emissions using the applicable procedure specified below:
		1. If operator chooses not to adjust the detection instrument readings for the background organic concentration level, then they must directly compare the maximum organic concentration value measured by the detection instrument to the potential leak of less than 500 ppmv.
		2. If operator chooses to adjust the detection instrument readings for the background organic concentration level, they must compare the value of the arithmetic difference between the maximum organic concentration value measured by the instrument and the background organic concentration value instrument to the potential leak of less than 500 ppmv.
	8. A potential leak interface is determined to operate with no detectable organic emissions less than 500 parts per million by volume.
2. Closed Vent System Requirements -- Repairs(§60.5416 (b) (9)):
	1. If a leak or defect is detected, operator must repair the leak or defect as soon as practicable according to the requirements below:
		1. A first attempt at repair must be made no later than 5 calendar days after the leak is detected.
		2. Repair must be completed no later than 15 calendar days after the leak is detected.
3. Closed Vent System Requirements – Delay in repairs(§60.5416 (b) (10)):
	1. Delay of repair of a closed vent system or cover for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, or if you determine that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. You must complete repair of such equipment by the end of the next shutdown.
4. Closed Vent System Requirements – Unsafe to inspect requirements(§60.5416 (b) (11)):
	1. Unsafe to inspect parts are exempt from normal inspection requirements if the operator determines the following:
		1. Operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger.
		2. Operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
5. Closed Vent System Requirements – Difficult to inspect requirements(§60.5416 (b) (11)):
	1. Difficult to inspect parts are exempt from normal inspection requirements if the operator determines the following:
		1. The operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface.
		2. You have a written plan that requires inspection of the equipment at least once every 5 years.

**Demonstration of Initial Compliance (§60.5410):**

Demonstration of Initial compliance begins no later than the date this rule is published in the Federal Register or upon initial startup, whichever is later, and ends no later than one year after publication or initial startup. Initial compliance consists of:

1. Demonstrate 95 % control (§60.5380) as demonstrated by the requirements of (§60.5413).
2. If you use a control device to reduce emissions, you must equip the wet seal fluid degassing system with a cover connected through a closed vent system to a control device.
3. You must conduct an initial performance test within 180 days after initial startup or by [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], whichever is later.
4. You must conduct the initial inspections.
5. You must install and operate the continuous parameter monitoring systems in accordance with §60.5417.
6. You must submit the notifications required in the notification, reporting, and recordkeeping requirements (§60.5420).
7. You must submit the initial annual report for your centrifugal compressor affected facility (§60.5420).
8. You must maintain the records as specified in the notification, reporting, and recordkeeping requirements (§60.5420).

**Continuous Monitoring requirements (§60.5417):**

Continue demonstration of initial compliance.

Exempt equipment:

* + - 1. A boiler or process heater in which all vent streams are introduced with the primary fuel or are used as the primary fuel.
			2. A boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts

All other control devices must meet the continuous control requirements as specified in (§60.5417)

**Notification, Reporting and Recordkeeping Requirements (§60.5420):**

Operator shall submit annual reports and performance test reports to the Administrator. The initial annual report is due 30 days after the end of the initial compliance period. Subsequent annual reports are due on the same date each year as the initial annual report

1. Annual reports will consist of:

a. General Information:

* 1. The company name and address
	2. identification of each affected facility being included in the annual report
	3. Beginning and ending dates of the reporting period
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. Compressor information

1. Identification of each centrifugal compressor using a wet seal system constructed, modified or reconstructed during the reporting period
2. Records of deviations that occurred during the reporting period.
3. The records of closed vent system and cover inspections.
4. Annual Test reports
5. Within 60 days of performance testing, operator shall submit results to EPA’s webfire database.
6. Within 60 days of performance testing, operator shall submit results to the Administrator.
7. Recordkeeping
8. Operator must maintain records of deviations in cases where the centrifugal compressor was not operated in compliance for a period of not less than 5 years.

Section 3

NSPS Subpart OOOO §60.5385: Reciprocating Compressors

**Reciprocating Compressors (§60.5385) and effects within the District:**

NSPS Subpart OOOO applies to reciprocating compressors located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. The reciprocating compressors are considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

As discussed above, we are not aware of any new natural gas wells being drilled in the District, and therefore there is not expected to be any new reciprocating compressors serving such wells. As such, this section of Subpart OOOO is not expected to affect operators in the District.

Notwithstanding the above, some reciprocating compressors are subject to District Rule 4409 - Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities. Other reciprocating compressors (those associated with heavy oil production) are not subject to Rule 4409.

Subpart OOOO requires reciprocating compressors to replace the rod packing according to a 36 month schedule. There is no District rule or BACT guideline that would require rod packing replacement.

**Requirements (§60.5385)**

Operator must replace the reciprocating compressor rod packing prior to either of the following:

1. Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER], or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.
2. Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

You must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5410.

You must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5415.

You must perform the required notification, recordkeeping, and reporting as required by §60.5420.

**Demonstration of Initial compliance ((§60.5410 (c)):**

1. During the initial compliance period, you must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.
2. You must submit the notifications required in 60.7(a)(1), (a)(3) and (a)(4).
3. You must submit the initial annual report for your reciprocating compressor as required below).
4. You must maintain the records for each reciprocating compressor affected facility.

**Continuous Monitoring requirements (§60.5415):**

1. You must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.
2. You must submit the annual report and maintain the records for your reciprocating compressor as required below.
3. You must replace compressor rod packing as required.

**Notification, Reporting and Recordkeeping Requirements(§60.5420):**

Annual Reporting:

Operator shall submit annual reports and performance test reports to the Administrator. The initial annual report is due 30 days after the end of the initial compliance period. Subsequent annual reports are due on the same date each year as the initial annual report.

1. Annual reports will consist of:

 a. General Information:

* 1. The company name and address;
	2. identification of each affected facility being included in the annual report;
	3. Beginning and ending dates of the reporting period;
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. Compressor information:

1. The cumulative number of hours or operation of the number of months since initial startup, October 25, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later.
2. Records of the date and time of each reciprocating compressor rod packing replacement.
3. Records of deviations in cases where the reciprocating compressor was not operated in compliance.
4. Recordkeeping

a. Operator must maintain records of deviations in cases where the centrifugal compressor was not operated in compliance for a period of not less than 5 years.

* 1. The cumulative number of hours or operation or the number of months since initial startup, October 12, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later
	2. Records of the date and time of each reciprocating compressor rod packing replacement.
	3. Records of deviations in cases where the reciprocating compressor was not operated in compliance

Section 4

NSPS Subpart OOOO §60.5390: Pneumatic Controllers

**Pneumatic Controllers (§60.5390) and effects within the District:**

NSPS Subpart OOOO applies to pneumatic controllers, defined as a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh, which commenced construction after August 23, 2011 and are located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment, and are not located at a natural gas processing plant.

As discussed above, we are not aware of any new natural gas wells being drilled in the District, and therefore there is not expected to be any new pneumatic controllers serving such wells. As such, this section of Subpart OOOO is not expected to affect operators in the District.

Additionally, this section applies to pneumatic controllers which commenced construction after August 23, 2011, and are located at a natural gas processing plant.

NSPS Subpart OOOO requires natural gas-driven pneumatic controllers located between wellhead and natural gas processing plant installed , modified, or reconstructed after August 23, 2011 have a bleed rate less than or equal to 6 standard cubic feet per hour.

NSPS Subpart OOOO requires natural gas-driven pneumatic controllers at natural gas processing plants have a bleed rate of 0 standard cubic feet per hour (i.e. not natural gas driven).

Some pneumatic controllers are subject to District Rule 4409 - Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities. Other pneumatic controllers (those associated with heavy oil production) are not subject to Rule 4409.

This new NSPS requirement may impose new requirements for facilities installing new pneumatic controllers. However, as noted above, District BACT guidelines will be updated so that compliance with District BACT requirements assures compliance with the emission control requirements of this new NSPS.

**Requirements (§60.5390)**

**Pneumatic controllers located at a natural gas plant ((§60.5390 (b) (1)):**

1. Pneumatic controllers must have a bleed rate of zero standard cubic feet per hour
2. Pneumatic controllers must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that pneumatic controller as required in §60.5420(c)(4)(iv)

**Pneumatic controllers located between the wellhead and a natural gas processing plant ((§60.5380 (c) (1)):**

1. Pneumatic controllers, on or after October 15, 2013, must have a bleed rate less than or equal to 6 standard cubic feet per hour.
2. Pneumatic controllers must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that controller as required in §60.5420(c)(4)(iii)

Operator must demonstrate initial compliance with standards that apply to pneumatic controller affected facilities as required by §60.5410.

Operator must demonstrate continuous compliance with standards that apply to pneumatic controller affected facilities as required by §60.5415.

Operator must perform the required notification, recordkeeping, and reporting as required by §60.5420, except that you are not required to submit the notifications specified in §60.5420(a).

Pneumatic controller bleed rate noted above does not apply if operator can demonstrate that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet per hour is required based on functional needs, including but not limited to response time, safety and positive actuation.

**Demonstration of Initial compliance ((§60.5410 (d)):**

1. If applicable, you have demonstrated by maintaining records as specified in §60.5420(c)(4)(ii) of your determination that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet of gas per hour is required as specified in §60.5390(a).
2. You own or operate a pneumatic controller affected facility located at a natural gas processing plant and your pneumatic controller is driven other than by use of natural gas and therefore emits zero natural gas.
3. You own or operate a pneumatic controller affected facility located between the wellhead and a natural gas processing plant and the manufacturer’s design specifications indicate that the controller emits less than or equal to 6 standard cubic feet of gas per hour.
4. You must include the information in paragraph (d)(1) of this section and a listing of the pneumatic controller affected facilities specified in paragraphs (d)(2) and (d)(3) of this section in the initial annual report submitted for your pneumatic controller affected facilities constructed, modified or reconstructed during the period covered by the annual report according to the requirements of §60.5420(b).
5. You must tag each new pneumatic controller affected facility according to the requirements of §60.5390(b)(2)

**Continuous Monitoring requirements (§60.5415):**

1. You must submit the annual report and maintain the records for your reciprocating compressor as required below.
2. You must continuously operate the pneumatic controllers as required.
3. You must submit the annual report as required
4. You must maintain records as required

**Notification, Reporting and Recordkeeping Requirements (§60.5420):**

Annual Reporting:

Operator shall submit annual reports and performance test reports to the Administrator. The initial annual report is due 30 days after the end of the initial compliance period. Subsequent annual reports are due on the same date each year as the initial annual report

1. Annual reports will consist of:

 a. General Information:

* 1. The company name and address
	2. Identification of each affected facility being included in the annual report
	3. Beginning and ending dates of the reporting period
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. Pneumatic controller information:

1. Identification of each pneumatic controller constructed, modified or reconstructed during the reporting period, including the identification information specified in §60.5390(c)(2).
2. If applicable, documentation that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.
3. Records of deviations specified in paragraph (c)(4)(v) of this section that occurred during the reporting period.
4. Reporting:
5. Operator must submit annual reports containing the Administrator and performance test reports as specified in paragraph (b)(7) of this section.

i. An identification of each pneumatic controller constructed, modified or reconstructed during the reporting period, including the identification information specified in §60.5390(c)(2).

ii. If applicable, documentation that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.

iii. Records of deviations specified in paragraph (c)(4)(v) of this section that occurred during the reporting period.

1. Recordkeeping:
2. Operator must maintain records for a period of not less than 5 years:

i. Records of the date, location and manufacturer specifications for each pneumatic controller constructed, modified or reconstructed.

ii. Records of the demonstration that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.

1. If the pneumatic controller is not located at a natural gas processing plant, records of the manufacturer’s specifications indicating that the controller is designed such that natural gas bleed rate is less than or equal to 6 standard cubic feet per hour.
2. If the pneumatic controller is located at a natural gas processing plant, records of the documentation that the natural gas bleed rate is zero.
3. (v) Records of deviations in cases where the pneumatic controller was not operated in compliance with the requirements specified in §60.5390.

Section 5

NSPS Subpart OOOO §60.5395: Storage Vessels

**Storage Vessels (§60.5395) and effects within the District:**

NSPS Subpart OOOO applies to storage vessels located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

**Definition:**

Storage vessel means a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

* + - 1. Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If you do not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
			2. Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
			3. Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

**Oil/condensate storage tanks:**

NSPS Subpart OOOO requires “new” tanks with VOC emissions of 6 tons per year to be equipped with a 95% efficient vapor control system. This subpart allows for up to 60 days to install a vapor control system to the tank under some situations.

District Rule 4623 - Storage of Organic Liquids - requires 95% control on some tanks depending on liquid TVP, size, and throughput. New tanks require BACT, which may be as stringent as a vapor control system.

Storage tanks subject to this Subpart OOOO requirement would trigger BACT, and, as noted above, District BACT guidelines will be updated so that compliance with District BACT requirements assures compliance with the emission control requirements of this new NSPS. There will also be additional administrative requirements as necessary to demonstrate that the NSPS requirement is not applicable or to demonstrate how the unit meets NSPS requirements.

**Storage Vessels Requirements (§60.5395)**

Operator shall comply with the standards in this section no later than October 15, 2013 for each storage vessel affected facility constructed, modified or reconstructed after August 23, 2011, with VOC emissions equal to or greater than 6 tpy.

The requirements of this Rule do not apply if the storage vessels are subject and controlled by the following rules:

 40 CFR part 60, Subpart Kb

 40 CFR part 63 Subpart G

 40 CFR part 63 Subpart CC

 40 CFR part 63 Subpart HH

 40 CFR part 63 Subpart WW

 40 CFR part 63 Subpart HHH

**Emissions Determination (§60.5395 (a)):**

**Site with No Other Wells in Production**

1. Determine the VOC emission rate for each storage vessel affected facility using any generally accepted model or calculation methodology within 30 days after startup
2. minimize emissions to the extent practicable during the 30 day period using good engineering practices
3. If storage vessel emits more than 6 tpy VOC, Operator must reduce VOC emissions by 95.0 percent of greater within 60 days after startup

**Site with Other Wells in Production**

1. Determine the VOC emission rate for each storage vessel affected facility using any generally accepted model or calculation methodology upon startup.
2. If storage vessel emits more than 6 tpy VOC, Operator must reduce VOC emissions by 95.0 percent or greater within startup

**Control Requirements ((§60.5412)):**

**Enclosed Combustion or Vapor Control Device**

1. Must be enclosed and meet the cover requirements of §60.5411
	1. The cover and all openings on the cover (e.g., access hatches, sampling ports, and gauge wells) shall form a continuous barrier over the entire surface area of the liquid in the storage vessel or wet seal fluid degassing system.
	2. Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) whenever material is in the unit on which the cover is installed except during those times when it is necessary to use an opening as follows:
		1. To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);
		2. To inspect or sample the material in the unit;
		3. To inspect, maintain, repair, or replace equipment located inside the unit; or
		4. To vent liquids, gases, or fumes from the unit through a closed-vent system to a control device.
2. Tank must be connected through a closed vent system that meets the requirements of §60.5411(a) to the control device:
	1. You must design the closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel or wet seal fluid degassing system to a control device that meets the requirements specified in §60.5412.
	2. You must design and operate the closed vent system with no detectable emissions as demonstrated by §60.5416(b).
	3. If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, the operator must do one of the following:
		1. You must properly install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device to the atmosphere that is capable of taking periodic readings and sounds an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device to the atmosphere.
		2. You must secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.
		3. Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to these requirements.
3. An enclosed thermal control device must meet one of the following requirements and demonstrate that the control device achieves the performance requirements using the performance test methods and procedures specified in §60.5413 :( §60.5412 (a) (1)).
	1. Combustion device must reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater.
	2. You must reduce the concentration of TOC in the exhaust gases at the outlet to the device to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen.
	3. You must operate at a minimum temperature of 760°C for a control device that can demonstrate a uniform combustion zone temperature during the performance test.
	4. If a boiler or process heater is used as the control device, then you must introduce the vent stream into the flame zone of the boiler or process heater.
4. A carbon adsorption system or condenser or other nondestructive control device to reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater as determined in accordance with the requirements of §60.5413. The vapor recovery device must meet the design analysis requirements of §60.5413(c):( §60.5412 (a)(2)).
5. A flare must be designed and operated in accordance with the requirements of §60.5413:( §60.5412 (a)(3)).

**All control devices listed above must:**

1. Operate at all times when gases, vapors, and fumes, are vented from the storage vessel.
2. Each control device shall be monitored in accordance with §60.5417.
3. Operator must demonstrate compliance according to the requirements of §60.5415(e)(2), as applicable.

**A carbon adsorption system must**

1. Operator must replace all carbon in the control device with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established according to §60.5413(c)(2) or (c)(3) for the carbon adsorption system. You must maintain records identifying the schedule for replacement and records of each carbon replacement as required in §60.5420(c)(6).
2. Spent carbon from the carbon adsorption system must either be regenerated, reactivated, or burned in one of the units specified below
	1. Regenerate or reactivate the spent carbon in a thermal treatment unit for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart X.
	2. Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with operating air emission controls in accordance with this section.
	3. Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with operating organic air emission controls in accordance with an emissions standard for VOC under another subpart in 40 CFR part 60 or this part.
	4. Burn the spent carbon in a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart O.
	5. Burn the spent carbon in a hazardous waste incinerator which you have designed and operated in accordance with the requirements of 40 CFR part 265, subpart O.
	6. Burn the spent carbon in a boiler or industrial furnace for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 266, subpart H.
	7. Burn the spent carbon in a boiler or industrial furnace that you have designed and operated in accordance with the interim status requirements of 40 CFR part 266, subpart H.

**Floating Roof Tank**

1. Must meet the requirements of §60.112b(a)(1) or (2).
2. Must meet relevant monitoring, inspection, recordkeeping, and reporting requirements in 40 CFR part 60, subpart Kb.

**Operator must demonstrate initial compliance with standards that apply to storage vessels as required by §60.5410.**

**Operator must demonstrate continuous compliance with standards that apply to storage vessels affected facilities as required by §60.5415.**

**Operator must** **perform the required notification, recordkeeping, and reporting as required by §60.5420, except that you are not required to submit the notifications specified in §60.5420(a).**

**Demonstration of Initial compliance ((§60.5410 (e)):**

1. Operator must determine the VOC emission rate within 30 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, and you must use good engineering practices to minimize emissions during the 30-day period.
2. Operator must determine the VOC emission rate upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.
3. For a storage vessel emitting more than 6 tpy VOC, you must reduce VOC emissions by 95.0 percent or greater within 60 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, or upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.
4. If you use a control device to reduce emissions, you must equip the storage vessel with a cover, a closed vent system and a control device that meets the requirements listed above within 60 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, or upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.
5. You must conduct an initial performance test within 180 days after initial startup or within 180 days of [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], whichever is later, and must conduct the compliance demonstration in §60.5415(b).
6. You must conduct the initial inspections required for storage vessels (§60.5416).
7. You must install and operate continuous parameter monitoring systems.
8. You must submit the information for the seven items above in this section in the initial annual report as required in §60.5420(b).
9. You must maintain the records as specified in §60.5420(c)(5) for each storage vessel affected facility.

**Continuous Monitoring requirements (§60.5415):**

For each storage vessel with VOC emission greater than 6 tpy operator must demonstrate:

1. Reduced VOC emissions from each storage vessel are reduced by 95.0 percent or greater.
2. Efficiency calculations for thermal controls are calculated as follows:
	1. You must operate below (or above) the site specific maximum (or minimum) parameter value established according to the requirements of §60.5417(f)(1).
	2. You must calculate the daily average of the applicable monitored parameter in accordance with §60.5417(e) except that the inlet gas flow rate to the control device must not be averaged.
	3. Compliance with the operating parameter limit is achieved when the daily average of the monitoring parameter value calculated under paragraph (e)(2)(ii) of this section is either equal to or greater than the minimum monitoring value or equal to or less than the maximum monitoring value established under paragraph (e)(2)(i) of this section. When performance testing of a combustion control device is conducted by the device manufacturer as specified in §60.5413(d), compliance with the operating parameter limit is achieved when the inlet gas flow rate is equal to or less than the value established under §60.5413(d)(1)(ii).
	4. You must operate the continuous monitoring system required in §60.5417 at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments). A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.
	5. You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other required data collection periods to assess the operation of the control device and associated control system.
	6. Failure to collect required data is a deviation of the monitoring requirements, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments).
	7. If you use a combustion control device to meet the requirements of §60.5412(a), you must demonstrate compliance by installing a device tested under the provisions in §60.5413(d) and complying with the criteria in paragraphs (e)(2)(vii)(A) through (e)(2)(vii)(D) of this section.
		1. The inlet gas flow rate must meet the range specified by the manufacturer. You must measure the flow rate as specified in §60.5417(d)(1)(viii)(A).
		2. A pilot flame must be present at all times of operation. You must monitor the pilot flame in accordance with §60.5417(d)(1)(viii)(B).
		3. You must operate the combustion control device with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. You must perform a visible emissions test using Method 22 at 40 CFR part 60, appendix A-7 monthly. The observation period must be 2 hours and must follow Method 22.
		4. Compliance with the operating parameter limit is achieved when the following criteria is met.
			1. The inlet gas flow rate monitored under paragraph (e)(2)(vii)(A) of this section is equal to or below the maximum established by the manufacturer.
			2. The pilot flame is present at all times; and
			3. During the visible emissions test performed under paragraph (e)(2)(vii)(C) of this section, the duration of visible emissions does not exceed a total of 5 minutes during the observation period. Devices failing the visible emissions test must follow the requirements in paragraphs
				1. Following the first failure, you must replace the fuel nozzle(s) and burner tubes.
				2. If, following replacement of the fuel nozzle(s) and burner tubes as specified in paragraph (e)(2)(vii)(D)(4) of this section, the visible emissions test is not passed in the next scheduled test, you must either conduct a performance test as specified in §60.5413, or replace the device with another control device whose model was tested and meets the requirements in §60.5413(d).
	8. If you use a condenser as the control device to achieve the percent reduction performance requirements specified in §60.5412(a)(2), you must demonstrate compliance using the following procedures:
		1. You must establish a site-specific condenser performance curve according to §60.5417(f)(2).
		2. You must calculate the daily average condenser outlet temperature in accordance with §60.5417(e).
		3. You must determine the condenser efficiency for the current operating day using the daily average condenser outlet temperature calculated under paragraph (e)(2)(viii)(B) of this section and the condenser performance curve established under paragraph (e)(2)(viii)(A) of this section.
		4. Except as provided in paragraphs (e)(2)(viii)(D)(1) and (e)(2)(viii)(D)(2) of this section, at the end of each operating day, you must calculate the 365-day rolling average TOC emission reduction, as appropriate, from the condenser efficiencies as determined in paragraph (e)(2)(viii)(C) of this section.
			1. After the compliance dates specified in §60.5370, if you have less than 120 days of data for determining average TOC 2. emission reduction, you must calculate the average TOC emission reduction for the first 120 days of operation after the compliance dates. You have demonstrated compliance with the overall 95.0 percent reduction requirement if the 120-day average TOC emission reduction is equal to or greater than 95.0 percent.
			2. After 120 days and no more than 364 days of operation after the compliance date specified in §60.5370, you must calculate the average TOC emission reduction as the TOC emission reduction averaged over the number of days between the current day and the applicable compliance date. You have demonstrated compliance with the overall 95.0 percent reduction requirement, if the average TOC emission reduction is equal to or greater than 95.0 percent.
		5. If you have data for 365 days or more of operation, you have demonstrated compliance with the TOC emission reduction if the rolling 365-day average TOC emission reduction calculated in paragraph (e)(2)(viii)(D) of this section is equal to or greater than 95.0 percent.

**Notification, Reporting and Recordkeeping Requirements**

**Annual Reporting:**

Operator shall submit annual reports and performance test reports to the Administrator. The initial annual report is due 30 days after the end of the initial compliance period. Subsequent annual reports are due on the same date each year as the initial annual report

1. Annual reports will consist of:

a. General Information:

* 1. The company name and address
	2. Identification of each affected facility being included in the annual report
	3. Beginning and ending dates of the reporting period
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

b. Storage Vessel information

1. An identification of each storage vessel with VOC emissions greater than 6 tpy constructed, modified or reconstructed during the reporting period.
2. Documentation that the VOC emission rate is less than 6 tpy.
3. Records of deviations specified in paragraph (c)(5)(iii) of this section that occurred during the reporting period.
4. Reporting

Within 60 days after the date of completing each performance test(see §60.8 of this part) as required by this subpart you must submit the results of the performance tests required by this subpart to EPA’s WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA’s Central Data Exchange (CDX) (www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA’s Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/index.html). Only data collected using test methods on the ERT website are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority.

1. Recordkeeping

 Operator must maintain records for a period of not less than 5 years.

i. If required to reduce emissions by complying with §60.5395, the records specified in §60.5416 of this subpart.

ii. Records of the determination that the VOC emission rate is less than 6 tpy per storage vessel for the exemption including identification of the model or calculation methodology used to calculate the VOC emission rate.

1. Records of deviations in cases where the storage vessel was not operated in compliance..
2. For vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), records indicating the number of consecutive days that the vessel is located at a site in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. If a vessel is removed from a site and, within 30 days, is either returned to or replaced by another vessel at the site to serve the same or similar function, then the entire period since the original vessel was first located at the site, including the days when the storage vessel was removed, will be added to the count towards the number of consecutive days.
3. For each storage vessel subject to the closed vent system inspection requirements, records of each inspection.
4. For each storage vessel subject to the cover requirements, a record of each inspection.
5. For each storage vessel subject to the bypass requirements, a record of each inspection or a record each time the key is checked out or a record of each time the alarm is sounded.
6. For each closed vent system used to comply with this subpart that must operate with no detectable emissions, a record of the monitoring conducted.
7. Records of the schedule for carbon replacement and records of each carbon replacement, if applicable.
8. For each storage vessel subject to the control device requirements, records of minimum and maximum operating parameter values, continuous parameter monitoring system data, calculated averages of continuous parameter monitoring system data, results of all compliance calculations, and results of all inspections.

Section 6

NSPS Subpart OOOO §60.5400: Leak Standards at Natural Gas Processing Plants

**Equipment Leak Standards:**

§60.5400 applies to the group of all equipment, except compressors, within a process unit at a natural gas processing plant.

Equipment is not in VOC service if:

* VOC content can be reasonably expected never to exceed 10.0 percent by weight.
* Wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process.

§60.5400 (a) requires operator to comply with the following sections of existing requirements of Subpart VVA--STANDARDS OF PERFORMANCE FOR EQUIPMENT LEAKS OF VOC IN THE SYNTHETIC ORGANIC CHEMICALS MANUFACTURING INDUSTRY FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER NOVEMBER 7, 2006:

**§60.482-1a(a), (b), and (d) Standards: General:**

1. Each owner or operator subject to the provisions of this subpart shall demonstrate compliance for all equipment within 180 days of initial startup
2. Compliance with §60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspections.
3. Equipment that is in vacuum service are excluded from the requirements.

**§60.482-2a Standards: Pumps in light liquid service.**

1. Each pump in light liquid service shall be:
	1. Monitored monthly to detect leaks. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period. The following pumps are exempt from this requirement:
		1. A pump that replaces a leaking pump
		2. Pumps equipped with a dual mechanical seal system that includes a barrier fluid system
		3. A pump that is designated, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background
		4. Any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the standards for Closed vent systems and control devices (§60.482-10a) .
	2. Checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
2. A gas leak is defined as 2,000 ppm or greater
3. If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified below. (This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than 2,000 ppm).
	1. Monitor the pump within 5 days as specified in §60.485a(b) (Standards: Delay of Repair). A leak is detected if the instrument reading measured during monitoring indicates a leak 2000 ppm or greater. The leak shall be repaired using the procedures listed below.
	2. Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures listed below or by eliminating the visual indications of liquids dripping.
4. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.
	1. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described below, where practicable:
		1. Tightening the packing gland nuts
		2. Ensuring that the seal flush is operating at design pressure and temperature.
5. As stated above, each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from monthly monitoring and weekly visual inspections if the following six requirements are met.

a. Each dual mechanical seal system is:

* + 1. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
		2. Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10a (Standards: Closed vent systems and control devices); or
		3. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere
	1. The barrier fluid system is in heavy liquid service or is not in VOC service.
	2. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
	3. Visual inspections:
		1. Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
		2. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure below prior to the next required inspection.
			1. Monitor the pump within 5 days to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.
			2. Designate the visual indications of liquids dripping as a leak.
	4. Each barrier fluid system sensor:
		1. checked daily or is equipped with an audible alarm.
		2. The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
		3. If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.
	5. When a leak is detected:
		1. During monitoring it shall be repaired as specified in above.
		2. If a leak is detected by the barrier fluid system sensor, it shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.
		3. A liquid leak shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.
1. Any pump that is designated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from monthly monitoring, repair, mechanical seal system requirements if the pump:
	1. Has no externally actuated shaft penetrating the pump housing;
	2. Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485a(c); and
	3. Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.
2. If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482–10a (Standards Closed vent system and control devices), it is exempt from the monthly monitoring, leak detection, leak repair, mechanical seal system requirements of this section.
3. Any pump that is designated as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements if:
	1. The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger; and
	2. The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment if a leak is detected.
4. Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement and the daily barrier fluid system sensor monitoring requirements, provided that each pump is visually inspected as often as practicable and at least monthly.

**§60.482-4a Standards: Pressure relief devices in gas/vapor service**

* + - 1. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background.
			2. After each pressure release,
				1. the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482–9a (Standard: delay of Repair).
				2. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background.
			3. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10a (Standards: closed vent systems and control devices) is exempted from the requirements of this section.
			4. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of this section, provided the owner or operator complies with the requirements with the following.
				1. After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9a (Standards: delay of repair).

**§60.482-5a Standards: Sampling connection systems**

Equipment is exempt from these requirements (§60.5401)

**§60.482-6a Standards: Open-ended valves or lines**

1. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
2. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
3. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
4. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall equipped with a cap, blind flange, plug, or a second valve at all other times.
5. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the blind flange, plug, or a second valve requirements of this section.

**§60.482-7a Standards: Valves in gas/vapor service and in light liquid service**

1. Each valve shall be monitored monthly
	1. To detect leaks and shall comply with the requirements of this section, except if designated for no detectable emissions (less than 500 ppm), unsafe-to-monitor, or difficult to monitor.
	2. A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit, except for a valve that replaces a leaking valve or if designated for no detectable emissions (less than 500 ppm), unsafe-to-monitor, or difficult to monitor, must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.
2. If an instrument reading of 500 ppm or greater is measured, a leak is detected.
3. Any valve for which a leak is not detected for 2 successive months
	* 1. May be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
		2. As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.
4. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
5. When a leak is detected:
	1. it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482–9a (Standards: Delay of repair).
	2. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
6. First attempts at repair include, but are not limited to, the following best practices where practicable:
	1. Tightening of bonnet bolts;
	2. Replacement of bonnet bolts;
	3. Tightening of packing gland nuts;
	4. Injection of lubricant into lubricated packing.
7. Any valve that is designated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the monthly monitoring requirements if the valve:
	1. Has no external actuating mechanism in contact with the process fluid,
	2. Is operated with emissions less than 500 ppm above background, and
	3. Is tested for compliance with emissions less than 500 ppm initially upon designation, annually, and at other times requested by the Administrator.
8. Any valve that is designated as an unsafe-to-monitor valve is exempt from the monthly monitoring if:
	1. The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with monthly monitoring requirements, and
	2. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.
9. Any valve that is designated as a difficult-to-monitor valve is exempt from the monthly monitoring requirements if:
	1. The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.
	2. The process unit within which the valve is located either:
		1. Becomes an affected facility and was constructed on or before January 5, 1981; or
		2. Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.
	3. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

**§60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors**

1. If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:
	1. The owner or operator shall monitor the equipment within 5 days and shall comply with the leak threshold (10,000 ppm) and repairer requirements of this section.
	2. The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.
2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected
3. When a leak is detected
	1. it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a (Standards: Delay in repair).
	2. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
4. First attempts at repair include, but are not limited to, the best practices described under §§60.482–2a(c)(2) and 60.482–7a(e).

**§60.482-9 Delay of repair.**

1. Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.
2. Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.
3. Delay of repair for valves and connectors will be allowed if:
	1. The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
	2. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10a (Standards: Closed vent systems and control devices).
4. Delay of repair for pumps will be allowed if:
	1. Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
	2. Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
5. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
6. When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

**§60.482-10a Standards: Closed vent systems and control devices**

1. Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.
2. Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.
3. Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.
4. Flares used to comply with this subpart shall comply with the requirements of §60.18.
5. Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.
6. Except for systems operating under a vacuum, designated unsafe to inspect, or designated as difficult to inspect, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.
	1. If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the following two requirements:
		1. Conduct an initial inspection;
		2. Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
	2. If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
		1. Conduct an initial inspection; and
		2. Conduct annual inspections.
7. Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair..
	1. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
	2. Repair shall be completed no later than 15 calendar days after the leak is detected.
8. Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.
9. If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the initial and annual inspection requirements of this section.
10. Any parts of the closed vent system that are designated as unsafe to inspect are exempt from the initial and annual inspection requirements of this section if they comply with the following two requirements:
	1. The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with the inspections; and
	2. The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
11. Any parts of the closed vent system that are designated as difficult to inspect are exempt from the initial and annual inspection requirements of this section if they comply with the following three requirements of this section:
	1. The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
	2. The process unit within which the closed vent system is located becomes an affected facility through modification or reconstruction, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and
	3. The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.
12. The owner or operator shall record the information specified below:
	1. Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.
	2. Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.
	3. For each inspection during which a leak is detected, a record of the information:
		1. The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.
		2. The date the leak was detected and the dates of each attempt to repair the leak.
		3. Repair methods applied in each attempt to repair the leak.
		4. Maximum instrument reading measured by Method 21 at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.
		5. “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
		6. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
		7. The expected date of successful repair of the leak if a leak is not repaired within 15 days.
		8. Dates of process unit shutdowns that occur while the equipment is unrepaired.
		9. The date of successful repair of the leak.
	4. For each inspection during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
	5. For each initial visual inspection during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
13. Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

**§60.482-11a Standards: Connectors in gas/vapor service and in light liquid service**

1. The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.
2. Except as allowed in §60.482–10a (Standards: Closed vent systems and control devices), or designated as unsafe, the owner or operator shall perform initial and ongoing monitoring of all connectors in gas and vapor and light liquid service.
	1. The connectors shall be monitored to detect leaks by approved methods.
	2. If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.
	3. The owner or operator shall perform monitoring, subsequent to the initial monitoring, ongoing monitoring, and shall comply with the re-monitoring and recordkeeping requirements.
		1. If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).
		2. If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.
		3. If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as follows, as appropriate.
			1. An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.
			2. If the percent of leaking connectors calculated from the monitoring results is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to the percent of leaking connectors within the total monitored connectors.
			3. If the percent of leaking connectors calculated is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.
		4. If, during the monitoring, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.
		5. The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.
3. For use in determining the monitoring frequency, the percent leaking connectors shall be calculated by using the following equation:

%CL= CL/ Ct\* 100

Where:

%CL= Percent of leaking connectors as determined through periodic monitoring.

CL= Number of connectors measured at 500 ppm or greater.

Ct= Total number of monitored connectors in the process unit or affected facility.

1. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a (Standards: Delay in repairs). A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.
2. Any connector that is designated as an unsafe-to-monitor connector is exempt from the initial and ongoing monitoring requirements of if:
	1. The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger; and
	2. The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the repair procedures in this section if a leak is detected.
3. Inaccessible, ceramic, or ceramic-lined connectors .
	1. Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring, the leak repair requirements, and from the recordkeeping and reporting requirements. An inaccessible connector is one that meets any of the following:
		1. Buried;
		2. Insulated in a manner that prevents access to the connector by a monitor probe;
		3. Obstructed by equipment or piping that prevents access to the connector by a monitor probe;
		4. Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;
		5. Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or
		6. Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.
	2. If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.
	3. Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

**§60.5400 (b) allows an alternative to:**

Subpart VVA--STANDARDS OF PERFORMANCE FOR EQUIPMENT LEAKS OF VOC IN THE SYNTHETIC ORGANIC CHEMICALS MANUFACTURING INDUSTRY FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER NOVEMBER 7, 2006:

Operator may elect to comply with § 60.483-1a (Alternative standards for valves--allowable percentage of valves leaking) and 60.833-2a (Alternative standards for valves--skip period leak detection and repair) instead. These include:

§ 60.483-1(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

§ 60.484-1(a) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7:

* 1. After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
1. After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

**§60.5400 (c) allows an alternative:**

You may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart.

**§60.5400 (d)** requires operator to comply with test method requirements of §60.485a (Test methods and procedures) except for the following (§60.5400 (f)):

Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service:

For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight.

For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process.

For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E16963, 77, or 93, E168-67, 77, or 92, or E260-73, 91, or 96 (incorporated by reference as specified in §60.17) must be used.

**§60.5400 (e) Requires you to comply with the recordkeeping and reporting provisions of §§60.486a (recordkeeping requirements) and 60.487a (reporting requirements) of this part except as provided in §§60.5401, 60.5421, and 60.5422.**

**§60.5401 Exceptions to the requirements of §60.5400**:

Definitions (§60.5401)

Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150oC (302oF) as determined by ASTM Method D86-78, 82, 90, 95, or 96

Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150oC (302oF) as determined by ASTM Method D86-78, 82, 90, 95, or 96 (incorporated by reference as specified in §60.17).

**Pressure relief devices:**

Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks

If an instrument reading of 500 ppm or greater is measured, a leak is detected

When a leak is detected, it must be repaired as soon as practicable, but no later than 15 calendar days after it is detected. A first attempt at repair must be made no later than 5 calendar days after each leak is detected.

If any pressure relief device is located in a nonfractionating plant that is monitored only by non-plant personnel may be monitored after a pressure release the next time the monitoring personnel are on-site, instead of within 5 days. No pressure relief device shall not operate for more than 30 days after a pressure release without monitoring.

**Sampling connection systems are exempt from the requirements of 60.5400**

**Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service** that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§60.482-2a(a)(1) and 60.482-7a(a), and the pressure relief monitoring requirements of §60.5401.

**§60.5402 Allows for alternative emissions limitation as approved by the Administrator.**

**Demonstration of Initial Compliance (S60.5410):**

For affected facilities at onshore natural gas processing plants, initial compliance with the VOC requirements is demonstrated if you are in compliance with the requirements of §60.5400.

**Demonstration of Continual Compliance (S60.5415):**

For affected facilities at onshore natural gas processing plants, continual compliance with the VOC requirements is demonstrated if you are in compliance with the requirements of §60.5400.

**Additional Recordkeeping Requirements (S60.5421):**

**In addition to compliance with §60.486a Pressure vessels must comply with the following:**

* 1. When each leak is detected, a weatherproof and readily visible identification, marked with the equipment identification number, must be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.
	2. When each leak is detected, the following information must be recorded in a log and shall be kept for 2 years in a readily accessible location:
		1. The instrument and operator identification numbers and the equipment identification number.
		2. The date the leak was detected and the dates of each attempt to repair the leak.
		3. Repair methods applied in each attempt to repair the leak.
		4. ”Above 500 ppm” if the maximum instrument reading after each repair attempt is 500 ppm or greater.
		5. ”Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
		6. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
		7. The expected date of successful repair of the leak if a leak is not repaired within 15 days.
		8. Dates of process unit shutdowns that occur while the equipment is unrepaired.
		9. The date of successful repair of the leak.
		10. A list of identification numbers for equipment that are designated for no detectable emissions (<500 ppm). The designation of this equipment must be signed by the owner or operator.

**Additional Reporting Requirements (S60.5422):**

In addition to compliance with the reporting requirements of §60.487(a), operator must comply with the following:

1. An owner or operator must include the following information in the initial semiannual report in addition to the information required in §60.487a(b)(1) through (4):
	1. Number of pressure relief devices subject to the requirements of §60.5401(b) except for those pressure relief devices designated for no detectable emissions
	2. and those pressure relief devices complying with §60.482– 4a(c)
	3. Number of pressure relief devices for which leaks were detected as required in §60.5401(b)(2);
	4. Number of pressure relief devices for which leaks were not repaired as required in §60.5401(b)(3).

Section 7

NSPS Subpart OOOO §60.5400: Sweetening Units at Onshore Natural Gas Processing

**NSPS Subpart OOOO** (§60.5405)

NSPS Subpart OOOO regulates VOC and SO2 emissions from the exploration, production, processing, and transportation of oil and gas. These facilities include completion of natural gas wells, compressors, pneumatic controllers, storage vessels, sweeting units and associated fugitive emissions and sweetening units at onshore natural gas processing plants.

This applies to sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells which commenced construction, was modified or reconstruction after August 23, 2011.

(1) Each sweetening unit that processes natural gas is an affected facility; and

(2) Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.

(3) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H2S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in § 60.5423(c) but are not required to comply with §§ 60.5405 through 60.5407 and §§ 60.5410(g) and 60.5415(g) of this subpart.

(4) Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§ 60.5405 through 60.5407, 60.5410(g),

A review of District records revealed that there are no sweetening units located at gas plants that may be subject to this requirement.

**Efficiency Standards (§60.5405):**

Initial Performance Test

During the initial performance test required by §60.8(b), you must achieve at a minimum, an SO2 emission reduction efficiency (Zi) to be determined from Table 1 of this subpart based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

Ongoing Minimum Reduction efficiency

You must achieve at a minimum, an SO2 emission reduction efficiency (Zc) to be determined from Table 2 of this subpart based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

|  |
| --- |
| **Table 1 to Subpart OOOO of part 60 – Required Minimum Initial SO2 Emission Reduction Efficiency (Zi)** |
| **H2S content of acid gas(Y), %** | **Sulfur feed rate (X), LT/D** |
| **2.0<X<5.0** | **5.0<X<15.0** | **15.0<X<300.0** | **X>300.0** |
| **Y>50** | 79.0 | 88.51X0.0101Y0.0125 or 99.9, whichever is smaller |
| **20<Y<50** | 79.0 | 88.5X0.0101Y0.0125 or 97.9, whichever is smaller | 97.9 |
| **10<Y<20** | 79.0 | 88.51X0.0101Y0.0125 or 99.9, whichever is smaller | 93.5 | 93.5 |
| **Y<10** | 79.0 | 79.0 | 79.0 | 79.0 |

|  |
| --- |
| **Table 2 to Subpart OOOO of part 60 – Required Minimum Initial SO2 Emission Reduction Efficiency (Zc)** |
| **H2S content of acid gas(Y), %** | **Sulfur feed rate (X), LT/D** |
| **2.0<X<5.0** | **5.0<X<15.0** | **15.0<X<300.0** | **X>300.0** |
| **Y>50** | 74.0 | 88.35X0.0144Y0.0128 or 99.9, whichever is smaller |
| **20<Y<50** | 74.0 | 88.35X0.0144Y0.0128 or 99.9, whichever is smaller | 97.5 |
| **10<Y<20** | 74.0 | 88.35X0.0144Y0.0128 or 99.9, whichever is smaller | 90.8 | 90.8 |
| **Y<10** | 74.0 | 74.0 | 74.0 | 74.0 |

Efficiency Calculations:

 Average Feed Rate (X):

X = KQaY

Where:

X = average sulfur feed rate, Mg/D (LT/D)

Qa = average volumetric flow rate of acid gas from sweetening

unit, dscm/day (dscf/day)

Y = average H2S concentration in acid gas feed from sweetening unit, percent by volume, expressed as a decimal.

K = (32 kg S/kg-mole)/((24.04 dscm/kg-mole)(1000 kg S/Mg))

 = **1.331 × 10−3Mg/dscm, for metric units**

 = (32 lb S/lb-mole)/((385.36 dscf/lb-mole)(2240 lb S/longton))

 = **3.707 × 10−5 long ton/dscf, for English units.**

Equation Notes:

1. You must use the continuous readings from the process flowmeter to determine the average volumetric flow rate (Qa) in dscm/day (dscf/day) of the acid gas from the sweetening unit for each run.
2. You must use the Tutwiler procedure in §60.5408 or a chromatographic procedure following ASTM E–260 (incorporated by reference—see §60.17) to determine the H2S concentration in the acid gas feed from the sweetening unit (Y). At least one sample per hour (at equally spaced intervals) must be taken during each 4-hour run. The arithmetic mean of all samples must be the average H2S concentration (Y) on a dry basis for the run. By multiplying the result from the Tutwiler procedure by 1.62 × 10−3, the units gr/100 scf are converted to volume percent.
3. Average Feed Rate (X) and average H2S concentration in acid gas feed from sweetening (Y) must be used to determine initial (Zi) and continuous (Zc) reduction efficiencies of SO2 emissions.

SO2 standards are calculated as follows:

Emission reduction efficiency (R):

R = (100S) / (S + E)

S = sulfur production rate, kg/hr (lb/hr)

E = emission rate of sulfur

Equation Notes:

1. You must use the level indicators or manual soundings to measure the liquid sulfur accumulation rate in the product storage vessels. You must use readings taken at the beginning and end of each run, the tank geometry, sulfur density at the storage temperature, and sample duration to determine the sulfur production rate (S) in kg/hr (lb/hr) for each run.

Emissions Rate of Sulfur (E):

E = Ce Qsd / (K)

E = emission rate of sulfur, kg/hr

**Ce =** concentration of sulfur equivalent (SO2+ reduced sulfur) g/dscm (lb/dscf).

Qsd = volumetric flow rate of effluent gas, dscm/hr (dscf/hr)

K1 = conversion factor, 1000 g/kg (7000 gr/lb).

Equation Notes:

1. The concentration (Ce) of sulfur equivalent must be the sum of the SO2 and TRS concentrations, after being converted to sulfur equivalents. For each run and each of the test methods specified in this this section, you must use a sampling time of at least 4 hours. You must use Method 1 of appendix A to part 60 of this chapter to select the sampling site. The sampling point in the duct must be at the centroid of the cross-section if the area is less than 5 m2 (54 ft2 ) or at a point no closer to the walls than 1 m (39 in) if the cross-sectional area is 5 m2 or more, and the centroid is more than 1 m (39 in.) from the wall.
2. You must use Method 6 of appendix A to part 60 of this chapter to determine the SO2 concentration. You must take eight samples of 20 minutes each at 30-minute intervals. The arithmetic average must be the concentration for the run. The concentration must be multiplied by 0.5 × 10−3 to convert the results to sulfur equivalent.
3. You must use Method 15 of appendix A to part 60 of this chapter to determine the TRS concentration from reduction-type devices or where the oxygen content of the effluent gas is less than 1.0 percent by volume. The sampling rate must be at least 3 liters/min (0.1 ft3 /min) to insure minimum residence time in the sample line. You must take sixteen samples at 15minute intervals. The arithmetic average of all the samples must be the concentration for the run. The concentration in ppm reduced sulfur as sulfur must be multiplied by 1.333 × 10−3 to convert the results to sulfur equivalent.
4. You must use Method 16A or Method 15 of appendix A to part 60 of this chapter to determine the reduced sulfur concentration from oxidation-type devices or where the oxygen content of the effluent gas is greater than 1.0 percent by volume. You must take eight samples of 20 minutes each at 30minute intervals. The arithmetic average must be the concentration for the run. The concentration in ppm reduced sulfur as sulfur must be multiplied by 1.333 × 10−3 to convert the results to sulfur equivalent.
5. You must use Method 2 of appendix A to part 60 of this chapter to determine the volumetric flow rate of the effluent gas. A velocity traverse must be conducted at the beginning and end of each run. The arithmetic average of the two measurements must be used to calculate the volumetric flow rate (Qsd) for the run. For the determination of the effluent gas molecular weight, a single integrated sample over the 4-hour period may be taken and analyzed or grab samples at 1-hour intervals may be taken, analyzed, and averaged. For the moisture content, you must take two samples of at least 0.10 dscm (3.5 dscf) and 10 minutes at the beginning of the 4-hour run and near the end of the time period. The arithmetic average of the two runs must be the moisture content for the run.

**Monitoring Requirements (§60.5407):**

Daily Monitoring:

1. The accumulation of sulfur product over each 24-hour period.
2. The H2S concentration in the acid gas from the sweetening unit for each 24-hour period
3. The average acid gas flow rate from the sweetening unit. You must install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading must be recorded at least once per hour during each 24-hour period. The average acid gas flow rate must be computed from the individual readings.
4. The sulfur feed rate (X).
5. The required sulfur dioxide emission reduction efficiency for the 24-hour period. You must use the sulfur feed rate and the H2S concentration in the acid gas for the 24-hour period, as applicable, to determine the required reduction efficiency.

**Requirements when compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device,**

Operator must install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:

1. A continuous monitoring system to measure the total sulfur emission rate (E) of SO2 in the gases discharged to the atmosphere. The SO2 emission rate must be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system must be set so that the emission limit will be between 30 percent and 70 percent of the measurement range of the instrument system.
2. Except when performance tests are conducted under the provision of §60.8 to demonstrate compliance, a monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device must be certified by the manufacturer to be accurate to within ±1 percent of the temperature being measured.
3. If performance tests are conducted under the provision of §60.8 to demonstrate compliance, the temperature of the gas leaving the incinerator combustion zone must be determined using the monitoring device. If the volumetric ratio of sulfur dioxide to sulfur dioxide plus total reduced sulfur (expressed as SO2) in the gas leaving the incinerator is equal to or less than 0.98, then temperature monitoring may be used to demonstrate that sulfur dioxide emission monitoring is sufficient to determine total sulfur emissions. At all times during the operation of the facility, you must maintain the average temperature of the gas leaving the combustion zone of the incinerator at or above the appropriate level determined during the most recent performance test to ensure the sulfur compound oxidation criteria are met. Operation at lower average temperatures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. You may request that the minimum incinerator temperature be reestablished by conducting new performance tests under §60.8.
4. Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, you may, as an alternative to item 2 of this section, install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in paragraph (d) of this section in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the two monitoring systems must be used to compute the total sulfur emission rate (E).

Average sulfur emission reduction efficiency achieved (R) for each 24-hour clock internal. The 24-hour interval may begin and end at any selected clock time, but must be consistent. You must compute the 24-hour average reduction efficiency (R) based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E).

1. You must use data obtained from the sulfur production rate monitoring device specified in this rule to determine S.
2. You must use data obtained from the sulfur emission rate monitoring system to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. You must use at least two data points to calculate each 1-hour average. You must use a minimum of 18 1-hour averages to compute each 24-hour average.

**When compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device:**

Operator must install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO2 equivalent in the gases discharged to the atmosphere. The SO2 equivalent compound emission rate must be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system must be set so that the equivalent emission limit of §60.5405(b) will be between 30 and 70 percent of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.

Average sulfur emission reduction efficiency achieved (R) for each 24-hour clock internal. The 24-hour interval may begin and end at any selected clock time, but must be consistent. You must compute the 24-hour average reduction efficiency (R) based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E).

1. You must use data obtained from the sulfur production rate monitoring device specified in this rule to determine S.
2. You must use data obtained from the sulfur emission rate monitoring system to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. You must use at least two data points to calculate each 1-hour average. You must use a minimum of 18 1-hour averages to compute each 24-hour

**In lieu of complying with requirements associated when compliance is achieved through the use of an oxidation control system, or a reduction control system followed by a continually operated incineration device, or reduction control system not followed by a continually operated incineration device:**

Sources with a design capacity of less than 152 Mg/D (150 LT/D) of H2S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

R = K2 S / X

Where:

R = The sulfur dioxide removal efficiency achieved during the

24-hour period, percent.

K2 = Conversion factor, 0.02400 Mg/D per kg/hr (0.01071 LT/D per

lb/hr).

S = The sulfur production rate during the 24-hour period, kg/hr

(lb/hr).

X = The sulfur feed rate in the acid gas, Mg/D (LT/D).

Monitoring devices must be calibrated at least once per year according to the manufacture’s specifications.

The continuous emission monitoring must be subject to the emission monitoring requirements of §60.13 of the General Provisions. For conducting the continuous emission monitoring system performance evaluation required by §60.13(c), Performance Specification 2 of appendix B to part 60 of this chapter must apply, and Method 6 must be used for oxidation control system of a reduction control system .

Optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure see (§60.5408).

**Reporting & Recordkeeping Requirements (§60.5420):**

1. Annual reports will consist of:

 a. General Information:

* 1. The company name and address
	2. identification of each affected facility being included in the annual report
	3. Beginning and ending dates of the reporting period
	4. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
1. Annual Test reports
2. Within 60 days of performance testing operator shall submit results to EPA’s webfire database.
3. Within 60 days of performance testing operator shall submit results to the administrator.
4. Recordkeeping
5. Operator must retain records of all required calculations and measurements for at least 2 years following the date of the measurements.
6. You must submit a report of excess emissions to the Administrator in your annual report if you had excess emissions during the reporting period. For the purpose of these reports, excess emissions are defined as:
	* 1. Any 24-hour period (at consistent intervals) during which the average sulfur emission reduction efficiency (R) is less than the minimum required efficiency (Z).
		2. For any affected facility electing to comply by use of an oxidation control system or reduction control device followed by a continually operated incineration device, any 24-hour period during which the average temperature of the gases leaving the combustion zone of an incinerator is less than the appropriate operating temperature as determined during the most recent performance test. Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.
		3. To certify that a facility is exempt from the control requirements of these standards, for each facility with a design capacity less that 2 LT/D of H2S in the acid gas (expressed as sulfur) you must keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H2S expressed as sulfur.
		4. If you elect to comply with requirements associated with a limited capacity, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of H2S expressed as sulfur.
		5. The reporting requirements remain in force until and unless the EPA, in delegating enforcement authority to a state under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of obligation to comply with this section, provided that they comply with the requirements established by the state.

Section 8

40 CFR Part 63 subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities

NESHAP Subpart HH applies to major HAP sources that process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer or that process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. For the purposes of this subpart, natural gas enters the natural gas transmission and storage source category after the natural gas processing plant, when present. If no natural gas processing plant is present, natural gas enters the natural gas transmission and storage source category after the point of custody transfer.

The amendments to NESHAPS Subpart HH establish new requirements at major and area sources for certain glycol dehydrators. Additionally, Subpart HH lowered the leak definition for valves from 10,000 ppm to 500 ppm

A review of District records revealed that there are no oil/gas facilities that are major HAP sources. Therefore this Subpart is not expected to apply to any facilities in the District.

New Definitions:

Associated equipment: equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the wellbore to the point of custody transfer, except glycol dehydration units and storage vessels.

BTEX: benzene, toluene, ethyl benzene and xylene.

Flare: means a thermal oxidation system using an open flame

Glycol dehydration unit baseline operations: operations representative of the large glycol dehydration unit operations as of June 17, 1999 and the small glycol dehydrator unit operations as of August 23, 2011.

Large glycol dehydration unit: a glycol dehydration unit with an actual annual average natural gas flowrate equal to or greater than 85 thousand standard cubic meters per day and actual annual average benzene emissions equal to or greater than 0.90 Mg/yr.

Small glycol dehydration unit: a glycol dehydration unit, located at a major source, with an actual annual average natural gas flowrate less than 85 thousand standard cubic meters per day or actual annual average benzene emissions less than 0.90 Mg/yr,

**Compliance Deadlines:**

Each existing small glycol dehydration unit, located at a major source, that commenced construction before August 23, 2011, must achieve compliance no later than [INSERT DATE 3 YEARS AND 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER],

Each new small glycol dehydration unit, located at a major source, that commenced construction on or after August 23, 2011, must achieve compliance immediately upon initial startup or **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER],** whichever is later**.**

A production field facility, constructed on or before August 23, 2011, that was previously determined to be an area source but becomes a major source on the [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] must achieve compliance no later than [INSERT DATE 3 YEARS AND 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**Glycol Dehydrator Requirements (§63.765)**

Each glycol dehydration unit process vent, the owner or operator shall control air emissions by one of the following methods:

1. Large glycol dehydration unit, shall connect the process vent to a control device or a combination of control devices through a closed-vent system. The closed-vent system shall be designed and operated in accordance with the requirements of §63.771(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.771(d).
2. Large glycol dehydration unit shall connect the process vent to a control device or combination of control devices through a closed-vent system and the outlet benzene emissions from the control device(s) shall be reduced to a level less than 0.90 megagrams per year. The closed-vent system shall be designed and operated in accordance with the requirements of §63.771(c). The control device(s) shall be designed and operated in accordance with the requirements of§63.771(d), except that the performance levels specified in §63.771(d)(1)(i) and (ii) do not apply.
3. Existing small glycol dehydration unit process vent, must limit BTEX emissions as defined in §63.761, to the limit determined in Equation 1 of this section. You must limit BTEX emissions from each new small glycol dehydration unit process vent, as defined in §63.761, to the limit determined in Equation 2 of this section. These limits must be met by one of the following:
	1. Connect the process vent to a control device or combination of control devices through a closed-vent system. The closed vent system shall be designed and operated in accordance with the requirements of §63.771(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.771(f).
	2. Meet the emissions limit through process modifications in accordance with the requirements specified in §63.771(e).
	3. Meet the emissions limit for each small glycol dehydration unit using a combination of process modifications and one or more control devices through the requirements specified in paragraphs (b)(1)(iii)(A) and (B) of this section.
	4. Demonstrate that the emissions limit is met through actual uncontrolled operation of the small glycol dehydration unit. Document operational parameters in accordance with the requirements specified in §63.771(e) and emissions in accordance with the requirements specified in §63.772(b)(2).

The total HAP emissions to the atmosphere from the large glycol dehydration unit process vent are reduced by 95.0 percent through process modifications, or a combination of process modifications and one or more control devices

Control of HAP emissions from a GCG separator (flash tank) vent is not required if the owner or operator demonstrates, that total emissions to the atmosphere from the glycol dehydration unit process vent are reduced by one of the levels specified below

1. Large glycol dehydration unit - HAP emissions are reduced by 95.0 percent or more.
2. For any large glycol dehydration unit, benzene emissions are reduced to a level less than 0.90 megagrams per year.
3. For each existing small glycol dehydration unit, BTEX emissions are reduced to a level less than the limit calculated by Equation 1 of paragraph (b)(1)(iii) of this section.
4. For each new small glycol dehydration unit, BTEX emissions are reduced to a level less than the limit calculated by Equation 2 of paragraph (b)(1)(iii) of this section.

**Equipment leak Requirements (§63.769)**

This section is exempt to ancillary equipment and compressors which are controlled under the requirements of subpart H of this part; or is subject to and controlled under the requirements specified in 40 CFR part 60, subpart OOOO.

A leak from a valve is detected if an instrument reading of 500 ppm or greater is measured.

A leak detected from a valve at a source constructed on or before August 23, 2011 shall be repaired in accordance with the schedule in §61.242-7(d), or by [INSERT DATE 1 YEAR AND 60 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER], whichever is later.

A leak detected from a valve at a source constructed after August 23, 2011 shall be repaired in accordance with the schedule in §61.242-7(d), or by [INSERT DATE 60 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER], whichever is later.

**Control Equipment Requirements (§63.771)**

The closed-vent system shall route all gases, vapors, and fumes emitted from the material in an emissions unit to a control device that meets the requirements Below:

1. Enclosed combustion device (e.g., thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater) that is designed and operated to meet the levels specified below. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.
	1. The mass content of BTEX in the gases vented to the device is reduced as determined in accordance with the requirements of §63.772(e), or
	2. The concentration of either TOC or total HAP in the exhaust gases at the outlet of the device is reduced to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen as determined in accordance with the requirements of §63.772(e).
2. A vapor recovery device (e.g., carbon adsorption system or condenser) or other non-destructive control device that is designed and operated to reduce the mass content of BTEX in the gases vented to the device as determined in accordance with the requirements of §63.772(e).
3. A flare

Controlled devices shall operate each control device in accordance with the following requirements:

1. Each control device used to comply with this subpart shall be operating at all times. An owner or operator may vent more than one unit to a control device used to comply with this subpart.
2. For each control device monitored in accordance with the requirements of §63.773(d), the owner or operator shall demonstrate compliance according to the requirements of either §63.772(f) or (h).
3. For each carbon adsorption system used as a control device to meet the requirements of paragraph (f)(1)(ii) of this section, the owner or operator shall manage the carbon as required under (d)(5)(i) and (ii) of this section.

Section 9

40 CFR Part 63 subpart HHH - National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities

NESHAP Subpart HHH applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions. A compressor station that transports natural gas prior to the point of custody transfer or to a natural gas processing plant (if present) is not considered a part of the natural gas transmission and storage source category. (§63.1270)

The amendments to NESHAPS Subpart HHH establish new requirements at major and area sources for glycol dehydrators. The following groups are included in HHH:

1. Large glycol dehydration unit
2. Small glycol dehydration unit for which construction commenced on or before August 23, 2011, is an existing small glycol dehydration unit.
3. Small glycol dehydration unit for which construction commenced after August 23, 2011, is a new small glycol dehydration unit.

A review of District records revealed that there are no oil/gas facilities that are major HAP sources. Therefore this Subpart is not expected to apply to any facilities in the District.

New Definitions (§63.1271):

Large glycol dehydration unit: A glycol dehydration unit with an actual annual average natural gas flowrate equal to or greater than 283.0 thousand standard cubic meters per day and actual annual average benzene emissions equal to or greater than 0.90 Mg/yr, A glycol dehydration unit complying with the 0.9 Mg/yr control option is considered to be a large dehydrator.

Small glycol dehydration unit: a glycol dehydration unit, located at a major source, with an actual annual average natural gas flowrate less than 283.0 thousand standard cubic meters per day or actual annual average benzene emissions less than 0.90 Mg/yr

**Changes to the Glycol Dehydrator Process Vent Standards (§63.1275)**

Each glycol dehydration unit process vent, the owner or operator shall control air emissions by one of the following methods:

1. Large glycol dehydration unit, shall connect the process vent to a control device or a combination of control devices through a closed-vent system. The closed-vent system shall be designed and operated in accordance with the requirements of §63.771(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.771(d).
2. a large glycol dehydration unit shall connect the process vent to a control device or a combination of control devices through a closed-vent system and the outlet benzene emissions from the control device(s) shall be less than 0.90 megagrams per year. The closed-vent system shall be designed and operated in accordance with the requirements of §63.1281(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(d), except that the performance requirements specified in §63.1281(d)(1)(i) and (ii) do not apply.
3. Existing small glycol dehydration unit process vent, must limit BTEX emissions to the limit determined in Equation 1 of this section. You must limit BTEX emissions from each new small glycol dehydration unit process vent to the limit determined in Equation 2 of this section. These limits must be met by one of the following:
	1. Connect the process vent to a control device or combination of control devices through a closed-vent system. The closed vent system shall be designed and operated in accordance with the requirements of §63.1281(c).The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(f).
	2. Meet the emissions limit through process modifications in accordance with the requirements specified in §63.1281(e).
	3. Meet the emissions limit for each small glycol dehydration unit using a combination of process modifications and one or more control devices through the requirements specified in paragraphs (b)(1)(iii)(A) and (B)of this section.
	4. Demonstrate that the emissions limit is met through actual uncontrolled operation of the small glycol dehydration unit. Document operational parameters in accordance with the requirements specified in §63.1281(e)and emissions in accordance with the requirements specified in §63.1282(a)(3)

The total HAP emissions to the atmosphere from the large glycol dehydration unit process vent are reduced by 95.0 percent through process modifications, or a combination of process modifications and one or more control devices

Control of HAP emissions from a GCG separator (flash tank) vent is not required if the owner or operator demonstrates, that total emissions to the atmosphere from the glycol dehydration unit process vent are reduced by one of the levels specified below

1. Large glycol dehydration unit - HAP emissions are reduced by 95.0 percent or more.
2. For any large glycol dehydration unit, benzene emissions are reduced to a level less than 0.90 megagrams per year.
3. For each existing small glycol dehydration unit, BTEX emissions are reduced to a level less than the limit calculated by Equation 1 of paragraph (b)(1)(iii) of this section.
4. For each new small glycol dehydration unit, BTEX emissions are reduced to a level less than the limit calculated by Equation 2 of paragraph (b)(1)(iii) of this section.

**Control Equipment Requirements (§63.1281)**

The closed-vent system shall route all gases, vapors, and fumes emitted from the material in an emissions unit to a control device that meets the requirements Below:

1. enclosed combustion device (e.g., thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater) that is designed and operated to meet the levels specified below. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.
	1. The mass content of BTEX in the gases vented to the device is reduced as determined in accordance with the requirements of §63.1282(d), or
	2. The concentration of either TOC or total HAP in the exhaust gases at the outlet of the device is reduced to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen as determined in accordance with the requirements of §63.772(e).
2. A vapor recovery device (e.g., carbon adsorption system or condenser) or other non-destructive control device that is designed and operated to reduce the mass content of BTEX in the gases vented to the device as determined in accordance with the requirements of §63.772(e).
3. A flare

Controlled devices shall operate each control device in accordance with the following requirements:

1. Each control device used to comply with this subpart shall be operating at all times. An owner or operator may vent more than one unit to a control device used to comply with this subpart.
2. For each control device monitored in accordance with the requirements of §63.773(d), the owner or operator shall demonstrate compliance according to the requirements of either §63.772(f) or (h).
3. For each carbon adsorption system used as a control device to meet the requirements of paragraph (f)(1)(ii) of this section, the owner or operator shall manage the carbon as required under (d)(5)(i) and (ii) of this section.

Section 10

Proposed BACT Guidelines

|  |
| --- |
| Unified Air Pollution Control District |
| **Best Available Control Technology (BACT) Guideline X.X.X** |
| Storage vessels With VOC emissions > 6 tons/year located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment |
| **Pollutant** | **Achieved in Practice or****contained in the SIP** | **Technologically****Feasible** | **Alternate Basic****Equipment** |
| VOC | 95 % capture and control efficiency |  |  |

|  |
| --- |
| Unified Air Pollution Control District |
| **Best Available Control Technology (BACT) Guideline X.X.X** |
| Pneumatic controllers located at a natural gas processing plant. |
| **Pollutant** | **Achieved in Practice or****contained in the SIP** | **Technologically****Feasible** | **Alternate Basic****Equipment** |
| VOC | bleed rate of zero standard cubic feet per hour |  |  |

Revise existing guideline

|  |
| --- |
| Unified Air Pollution Control District |
| **Best Available Control Technology (BACT) Guideline 7.2.7** |
| Equipment Leaks at Onshore Natural Gas Processing Plants |
| **Pollutant** | **Achieved in Practice or****contained in the SIP** | **Technologically****Feasible** | **Alternate Basic****Equipment** |
| VOC | Pumps: monthly monitoring, weekly visual inspections, 2000 ppm leek criteria (500 ppm for no leak criteria). PV valves is gas/vapor service: 500 ppm leak criteriaOpen-ended valves or lines: quipped with a closed cap, blind flange, plug, or a second valve except during use.Valves in gas/vapor service and in light liquid service: No leaks > 500 ppm, monthly monitoringPumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors: leak criteria of 10,000 ppmClosed vent systems and control devices: 95% control device, annual inspection, 500 ppm leak criteria,Standards: Connectors in gas/vapor service and in light liquid service: annual monitoring, 500 ppm leak criteria |  |  |