



6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OAR-2014-0738; FRL-9963-44-OAR]

### Notice of Final Approval for an Alternative Means of Emission Limitation at Chevron Phillips Chemical Company LP

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice; final approval.

**SUMMARY:** This notice announces our approval of the Alternative Means of Emission Limitation (AMEL) request from Chevron Phillips Chemical Company LP (CP Chem) under the Clean Air Act (CAA) to operate a multi-point ground flare (MPGF) at their ethylene plant in Baytown, Texas, and to operate an MPGF at their polyethylene plant in Old Ocean, Texas. This approval notice specifies the operating conditions and monitoring, recordkeeping, and reporting requirements that these facilities must follow to demonstrate compliance with the approved AMEL.

**DATES:** The approval of the AMEL request for the MPGF at CP Chem's ethylene plant in Baytown, Texas, and the MPGF at CP Chem's polyethylene plant in Old Ocean, Texas, is effective on **[Insert date of publication in the Federal Register]**.

**ADDRESSES:** The Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA-HQ-OAR-2014-0738. All documents in the docket are listed on the <http://www.regulations.gov> Web site. Although listed in the index, some information is not publicly available, *e.g.*, confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through <http://www.regulations.gov>, or in

hard copy at the EPA Docket Center, EPA WJC West Building, Room Number 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For questions about this final action, contact Mr. Andrew Bouchard, Sector Policies and Programs Division (E143-01), Office of Air Quality Planning and Standards (OAQPS), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-4036; fax number: (919) 541-3470; and email address: *bouchard.andrew@epa.gov*.

**SUPPLEMENTARY INFORMATION:**

*Acronyms and Abbreviations.* We use multiple acronyms and terms in this notice. While this list may not be exhaustive, to ease the reading of this notice and for reference purposes, the EPA defines the following terms and acronyms here:

AMEL	alternative means of emission limitation
Btu/scf	British thermal units per standard cubic foot
CAA	Clean Air Act
CBI	confidential business information
CFR	Code of Federal Regulations
CP Chem	Chevron Phillips Chemical Company LP
EPA	Environmental Protection Agency
Eqn	equation
HAP	hazardous air pollutants
HP	high pressure
LFL	lower flammability limit
LFL <sub>cz</sub>	lower flammability limit of combustion zone gas
LFL <sub>vg</sub>	lower flammability limit of flare vent gas
MPGF	multi-point ground flare
NESHAP	national emission standards for hazardous air pollutants
NHV	net heating value
NHV <sub>cz</sub>	net heating value of combustion zone gas
NHV <sub>vg</sub>	net heating value of flare vent gas

NSPS	new source performance standards
OAQPS	Office of Air Quality Planning and Standards
scf	standard cubic feet
VOC	volatile organic compounds

*Organization of This Document.* The information in this notice is organized as follows:

- I. Background
  - A. Summary
  - B. Regulatory Flare Requirements and CP Chem's AMEL Request
- II. Summary of Public Comments on CP Chem's AMEL Request
- III. Final Notice of Approval of CP Chem's AMEL Request and Required Operating Conditions

## **I. Background**

### *A. Summary*

In a **Federal Register** notice dated April 4, 2017, the EPA provided public notice and solicited comment on CP Chem's AMEL request under the CAA for the operation of an MPGF at an ethylene plant in Baytown, Texas, and for the operation of an MPGF at a polyethylene plant in Old Ocean, Texas (see 82 FR 16392).<sup>1</sup> This action solicited comment on all aspects of the AMEL request, including the operating conditions specified in that action that are necessary to achieve a reduction in emissions of volatile organic compounds (VOC) and organic hazardous air pollutants (HAP) at least equivalent to the reduction in emissions required by various standards in 40 CFR parts 60, 61, and 63 that apply to emission sources that would be controlled by these MPGFs. These standards incorporate the design and operating requirements for flares in the General Provisions to parts 60 and 63 as part of the emission reduction requirements. Because the two proposed MPGFs cannot meet the velocity requirements in these General Provisions, CP Chem requested an AMEL. In its request, CP Chem demonstrates that the

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<sup>1</sup> The MPGFs at both the ethylene plant and polyethylene plant will utilize pressure-assisted burners on all the high pressure (HP) stages; however, the first two stages on the MPGF at the polyethylene plant will also be steam-assisted.

proposed AMEL for each of the two facilities would achieve at least equivalent emissions reductions as flares that meet the standards in the General Provisions.

This action provides a summary of the comments received as part of the public review process, our response to those comments, and our approval of the AMEL request received from CP Chem for use of MPGFs at both their ethylene plant in Baytown, Texas, and polyethylene plant in Old Ocean, Texas, along with the operating conditions they must follow for demonstrating compliance with the approved AMEL.

*B. Regulatory Flare Requirements and CP Chem's AMEL Request*

CP Chem submitted a complete MPGF AMEL request, following the MPGF AMEL framework that was published in the **Federal Register** (see 81 FR 23480, April 21, 2016), to the EPA on November 28, 2016. CP Chem sought an AMEL to operate an MPGF for use during limited HP maintenance, startup, and shutdown events, as well as during upset events at their ethylene plant in Baytown, Texas. In addition, CP Chem sought an AMEL to operate an MPGF during certain routine operations (*i.e.*, the first two stages only), as well as during periods of maintenance, startup, shutdown, and upset at their polyethylene plant in Old Ocean, Texas. In its request, CP Chem cited various regulatory requirements in 40 CFR parts 60, 61, and 63 that will apply to the flare vent gas streams that will be collected and routed to their MPGFs at each of these two plants. See Table 1 for a list of regulations, by subparts, that CP Chem has identified as applicable to the two plants described above. These new source performance standards (NSPS) and national emissions standards for hazardous air pollutants (NESHAP) require that flares subject to these subparts meet the flare design and operating requirements in the General Provisions of part 60 and 63, respectively (*i.e.*, 40 CFR 60.18(b) and 63.11(b)). CP Chem is

requesting that the EPA approve the AMEL to be used by each of the two plants for complying with the flare requirements in the relevant subparts as specified in Table 1.

**Table 1 — Summary of Applicable Rules that May Apply to Vent Streams Controlled by Multi-Point Ground Flares**

<b>Applicable rules with vent streams going to control device(s)</b>	<b>CP Chem Ethylene Plant</b>	<b>CP Chem Polyethylene Plant</b>	<b>Rule citation from Title 40 CFR that allow for use of a flare</b>	<b>Provisions for Alternative Means of Emission Limitation</b>
NSPS Subpart VV		X	60.482-10(d)	60.484(a)-(f)
NSPS Subpart VVa	X		60.482-10a(d)	60.484a(a)-(f)
NSPS Subpart DDD		X	60.562-1(a)(1)(i)(C)	CAA section 111(h)(3)
NSPS Subpart NNN	X		60.662(b)	CAA section 111(h)(3)
NSPS Subpart RRR	X		60.702(b)	CAA section 111(h)(3)
NESHAP Subpart FF	X		61.349(a)(2)	61.353(a); also see 61.12(d)
NESHAP Subpart SS	X		63.982(b)	CAA section 112(h)(3)
NESHAP Subpart UU	X		63.1034	63.1021(a)-(d)
NESHAP Subpart XX	X		63.1091 *Note - This subpart cross-references to NESHAP subpart FF above	63.1097(b)(1)
NESHAP Subpart YY	X		Table 7 to §63.1103(e) cross-references to NESHAP subpart SS above	63.1113
NESHAP Subpart FFFF		X	63.2450(e)(2)	63.2545(b)(1); also see 63.6(g)

The provisions in each NSPS and NESHAP cited in Table 1 that ensure flares meet certain specific requirements when used to satisfy the requirements of the NSPS or NESHAP were established as work practice standards pursuant to CAA sections 111(h)(1) or 112(h)(1). For standards established according to these provisions, CAA sections 111(h)(3) and 112(h)(3) allow the EPA to permit the use of an AMEL by a source if, after notice and opportunity for comment,<sup>2</sup> it is established to the Administrator's satisfaction that such AMEL will achieve emission reduction at least equivalent to the reduction required under the CAA section 111(h)(1)

<sup>2</sup> CAA section 111(h)(3) specifically requires that the EPA provide an opportunity for a public hearing. The EPA provided an opportunity for a public hearing in the April 4, 2017, **Federal Register** action. However, no public hearing was requested.

or 112(h)(1) standard. As noted in Table 1, many of the NSPS and NESHAP in the table above also include specific regulatory provisions allowing sources to request an AMEL.

CP Chem sought such an AMEL request because their MPGFs are not designed to operate below the maximum permitted velocity requirements for flares in the General Provisions of 40 CFR parts 60 and 63. CP Chem provided information that the MPGFs they propose to use will achieve a reduction in emissions at least equivalent to the reduction in emissions for flares complying with these General Provisions requirements (for further background information on the regulatory flare requirements and a facility's ability to request an AMEL, see 82 FR 16392 - 16399, April 4, 2017).

## **II. Summary of Public Comments on CP Chem's AMEL Request**

The EPA received eight public comments on this action. The public comments received fell into one of the following three bins: (1) general support for CP Chem's AMEL request, (2) general opposition to CP Chem's AMEL request, and (3) general comments outside the scope of the action. None of the comments raised issues or otherwise mentioned any specific aspect of the MPGFs (including any operating condition) proposed for either of the two plants or the EPA's authority to approve these AMEL under the CAA. None of the commenters who opposed the EPA's proposal to approve the AMEL with the operating conditions specified in the April 4, 2017, action asserted that the EPA lacked authority to approve the AMEL or that the AMEL would not achieve at least equivalent emissions reductions as flares that meet the standards in the General Provisions. Additionally, the one commenter who generally opposed CP Chem's AMEL request did not provide any substantive reason for why they opposed the request, other than to note that existing regulations should be followed. Therefore, no changes have been made to the operating conditions specified in the April 4, 2017, action.

### **III. Final Notice of Approval of CP Chem's AMEL Request and Required Operating Conditions**

Based on information the EPA received from CP Chem and the comments received through the public comment period, we are approving CP Chem's request for an AMEL and establishing operating requirements for the MPGF at CP Chem's ethylene plant in Baytown, Texas, and the MPGF at CP Chem's polyethylene plant in Old Ocean, Texas. The operating conditions for CP Chem's MPGF that will achieve a reduction in emissions at least equivalent to the reduction in emissions being controlled by a steam-assisted, air-assisted, or non-assisted flare complying with the requirements of either 40 CFR 63.11(b) or 40 CFR 60.18(b) are as follows:

(1) The MPGF system for all HP stages at CP Chem's ethylene plant and for all HP stages excluding stage 1 and 2 for CP Chem's polyethylene plant must be designed and operated such that the net heating value of the combustion zone gas ( $NHV_{cz}$ ) is greater than or equal to 800 British thermal units per standard cubic foot (Btu/scf) or lower flammability limit of the combustion zone gas ( $LFL_{cz}$ ) is less than or equal to 6.5 percent by volume. The MPGF system for HP stages 1 and 2 of CP Chem's polyethylene plant must be designed and operated such that the  $NHV_{cz}$  is greater than or equal to 600 Btu/scf or the  $LFL_{cz}$  is less than or equal to 8.0 percent by volume. Owners or operators must demonstrate compliance with the  $NHV_{cz}$  or  $LFL_{cz}$  metric by continuously complying with a 15-minute block average. Owners or operators must calculate and monitor for the  $NHV_{cz}$  or  $LFL_{cz}$  according to the following:

(a) Calculation of  $NHV_{cz}$

(i) The owner or operator shall determine the net heating value of flare vent gas ( $NHV_{vg}$ ) by following the requirements of (1)(d)-(1)(e) below. If an owner or operator elects to use a monitoring system capable of continuously measuring (*i.e.*, at least once every 15

minutes), calculating, and recording the individual component concentrations present in the flare vent gas,  $NHV_{vg}$  shall be calculated using the following equation:

$$NHV_{vg} = \sum_{i=1}^n x_i NHV_i \quad (\text{Eqn. 1})$$

where:

$NHV_{vg}$  = Net heating value of flare vent gas, Btu/scf. *Flare vent gas* means all gas found just prior to the MPGF. This gas includes all flare waste gas (*i.e.*, gas from facility operations that is directed to a flare for the purpose of disposing of the gas), flare sweep gas, flare purge gas and flare supplemental gas, but does not include pilot gas.

$i$  = Individual component in flare vent gas.

$n$  = Number of components in flare vent gas.

$x_i$  = Concentration of component  $i$  in flare vent gas, volume fraction.

$NHV_i$  = Net heating value of component  $i$  determined as the heat of combustion where the net enthalpy per mole of offgas is based on combustion at 25 degrees Celsius (°C) and 1 atmosphere (or constant pressure) with water in the gaseous state from values published in the literature, and then the values converted to a volumetric basis using 20 °C for “standard temperature.” Table 2 summarizes component properties including net heating values.

(ii) For all MPGF HP stages at CP Chem’s ethylene plant and for all MPGF HP stages, excluding stage 1 and 2 for CP Chem’s polyethylene plant,  $NHV_{vg} = NHV_{cz}$ .

(iii) For HP stages 1 and 2 of CP Chem’s polyethylene plant MPGF,  $NHV_{cz}$  shall be calculated using the following equation:

$$NHV_{cz} = \frac{Q_{vg} \times NHV_{vg}}{(Q_{vg} + Q_s)} \quad (\text{Eqn. 2})$$

where:

$NHV_{cz}$  = Net heating value of combustion zone gas, Btu/scf.

$NHV_{vg}$  = Net heating value of flare vent gas for the 15-minute block period as determined according to (1)(a)(i) above, Btu/scf.

$Q_{vg}$  = Cumulative volumetric flow of flare vent gas during the 15-minute block period, standard cubic feet (scf).

$Q_s$  = Cumulative volumetric flow of total assist steam during the 15-minute block period, scf.

(b) Calculation of  $LFL_{cz}$

(i) The owner or operator shall determine  $LFL_{cz}$  from compositional analysis data by using the following equation:

$$LFL_{vg} = \frac{1}{\sum_{i=1}^n \left( \frac{\chi_i}{LFL_i} \right)} \times 100\% \quad (\text{Eqn. 3})$$

where:

$LFL_{vg}$  = Lower flammability limit of flare vent gas, volume percent (vol %).

$n$  = Number of components in the vent gas.

$i$  = Individual component in the vent gas.

$\chi_i$  = Concentration of component  $i$  in the vent gas, vol %.

$LFL_i$  = Lower flammability limit of component  $i$  as determined using values published by the U.S. Bureau of Mines (Zabetakis, 1965), vol %. All inerts, including nitrogen, are assumed to have an infinite LFL (e.g.,  $LFL_{N_2} = \infty$ , so that

$\chi_{N_2}/LFL_{N_2} = 0$ ). LFL values for common flare vent gas components are provided in Table 2.

(ii) For all MPGF HP stages at CP Chem's ethylene plant and for all MPGF HP stages, excluding stages 1 and 2 for CP Chem's polyethylene plant,  $LFL_{vg} = LFL_{cz}$ .

(iii) For HP stages 1 and 2 of CP Chem's polyethylene plant MPGF,  $LFL_{cz}$  shall be calculated using the following equation:

$$LFL_{cz} = \frac{LFL_{vg} \times (Q_{vg} + Q_s)}{Q_{vg}} \quad (\text{Eqn. 4})$$

where:

$LFL_{cz}$  = Lower flammability limit of combustion zone gas, vol %.

$LFL_{vg}$  = Lower flammability limit of flare vent gas, vol %.

$Q_{vg}$  = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

$Q_s$  = Cumulative volumetric flow of total assist steam during the 15-minute block period, scf.

(c) The operator of an MPGF system shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring the volumetric flow rate of flare vent gas ( $Q_{vg}$ ) and the volumetric flow rate of total assist steam ( $Q_s$ ).

(i) The flow rate monitoring systems must be able to correct for the temperature and pressure of the system and output parameters in standard conditions (*i.e.*, a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere).

(ii) Mass flow monitors may be used for determining volumetric flow rate of flare vent gas provided the molecular weight of the flare vent gas is determined using

compositional analysis so that the mass flow rate can be converted to volumetric flow at standard conditions using the following equation:

$$Q_{vol} = \frac{Q_{mass} \times 385.3}{MW_t} \quad (\text{Eqn. 5})$$

where:

$Q_{vol}$  = Volumetric flow rate, scf per second.

$Q_{mass}$  = Mass flow rate, pounds per second.

385.3 = Conversion factor, scf per pound-mole.

$MW_t$  = Molecular weight of the gas at the flow monitoring location, pounds per pound-mole.

(iii) Mass flow monitors may be used for determining volumetric flow rate of total assist steam. Use Equation 5 to convert mass flow rates to volumetric flow rates. Use a molecular weight of 18 pounds per pound-mole for total assist steam.

(d) The operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring (*i.e.*, at least once every 15 minutes), calculating, and recording the individual component concentrations present in the flare vent gas or the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording  $NHV_{vg}$  (in Btu/scf).

(e) For each measurement produced by the monitoring system used to comply with (1)(d) above, the operator shall determine the 15-minute block average as the arithmetic average of all measurements made by the monitoring system within the 15-minute period.

(f) The operator must follow the calibration and maintenance procedures according to Table 3. Maintenance periods, instrument adjustments, or checks to maintain precision and

accuracy and zero and span adjustments may not exceed 5 percent of the time the flare is receiving regulated material.

**Table 2 — Individual Component Properties**

<b>Component</b>	<b>Molecular Formula</b>	<b><math>MW_i</math> (pounds per pound-mole)</b>	<b><math>NHV_i</math> (British thermal units per standard cubic foot)</b>	<b><math>LFL_i</math> (volume %)</b>
Acetylene	C <sub>2</sub> H <sub>2</sub>	26.04	1,404	2.5
Benzene	C <sub>6</sub> H <sub>6</sub>	78.11	3,591	1.3
1,2-Butadiene	C <sub>4</sub> H <sub>6</sub>	54.09	2,794	2.0
1,3-Butadiene	C <sub>4</sub> H <sub>6</sub>	54.09	2,690	2.0
iso-Butane	C <sub>4</sub> H <sub>10</sub>	58.12	2,957	1.8
n-Butane	C <sub>4</sub> H <sub>10</sub>	58.12	2,968	1.8
cis-Butene	C <sub>4</sub> H <sub>8</sub>	56.11	2,830	1.6
iso-Butene	C <sub>4</sub> H <sub>8</sub>	56.11	2,928	1.8
trans-Butene	C <sub>4</sub> H <sub>8</sub>	56.11	2,826	1.7
Carbon Dioxide	CO <sub>2</sub>	44.01	0	∞
Carbon Monoxide	CO	28.01	316	12.5
Cyclopropane	C <sub>3</sub> H <sub>6</sub>	42.08	2,185	2.4
Ethane	C <sub>2</sub> H <sub>6</sub>	30.07	1,595	3.0
Ethylene	C <sub>2</sub> H <sub>4</sub>	28.05	1,477	2.7
Hydrogen	H <sub>2</sub>	2.02	274	4.0
Hydrogen Sulfide	H <sub>2</sub> S	34.08	587	4.0
Methane	CH <sub>4</sub>	16.04	896	5.0
Methyl-Acetylene	C <sub>3</sub> H <sub>4</sub>	40.06	2,088	1.7
Nitrogen	N <sub>2</sub>	28.01	0	∞
Oxygen	O <sub>2</sub>	32.00	0	∞
Pentane+ (C5+)	C <sub>5</sub> H <sub>12</sub>	72.15	3,655	1.4
Propadiene	C <sub>3</sub> H <sub>4</sub>	40.06	2,066	2.16
Propane	C <sub>3</sub> H <sub>8</sub>	44.10	2,281	2.1
Propylene	C <sub>3</sub> H <sub>6</sub>	42.08	2,150	2.4
Water	H <sub>2</sub> O	18.02	0	∞

**Table 3 — Accuracy and Calibration Requirements**

<b>Parameter</b>	<b>Accuracy Requirements</b>	<b>Calibration Requirements</b>
Flare Vent Gas Flow Rate	±20 percent of flow rate at velocities ranging from 0.1 to 1 foot per second. ±5 percent of flow rate at	Performance evaluation biennially (every 2 years) and following any period of more than 24 hours throughout which the flow rate

	<p>velocities greater than 1 foot per second.</p>	<p>exceeded the maximum rated flow rate of the sensor, or the data recorder was off scale. Checks of all mechanical connections for leakage monthly. Visual inspections and checks of system operation every 3 months, unless the system has a redundant flow sensor.</p> <p>Select a representative measurement location where swirling flow or abnormal velocity distributions due to upstream and downstream disturbances at the point of measurement are minimized.</p>
<p>Flow Rate for All Flows Other Than Flare Vent Gas</p>	<p>±5 percent over the normal range of flow measured or 1.9 liters per minute (0.5 gallons per minute), whichever is greater, for liquid flow.</p>	<p>Conduct a flow sensor calibration check at least biennially (every two years); conduct a calibration check following any period of more than 24 hours throughout which the flow rate exceeded the manufacturer's specified maximum rated flow rate or install a new flow sensor.</p>
	<p>±5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute), whichever is greater, for gas flow.</p>	<p>At least quarterly, inspect all components for leakage, unless the continuous parameter monitoring system has a redundant flow sensor.</p>
	<p>±5 percent over the normal range measured for mass flow.</p>	<p>Record the results of each calibration check and inspection.</p> <p>Locate the flow sensor(s) and other necessary equipment (such as straightening vanes) in a position that provides representative flow; reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.</p>
<p>Pressure</p>	<p>±5 percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.</p>	<p>Review pressure sensor readings at least once a week for straight-line (unchanging) pressure and perform corrective action to ensure proper pressure sensor operation if blockage is indicated.</p> <p>Performance evaluation annually and following any period of more than</p>

		<p>24 hours throughout which the pressure exceeded the maximum rated pressure of the sensor, or the data recorder was off scale. Checks of all mechanical connections for leakage monthly. Visual inspection of all components for integrity, oxidation, and galvanic corrosion every 3 months, unless the system has a redundant pressure sensor.</p> <p>Select a representative measurement location that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.</p>
Net Heating Value by Calorimeter	±2 percent of span	<p>Calibration requirements should follow manufacturer's recommendations at a minimum.</p> <p>Temperature control (heated and/or cooled as necessary) the sampling system to ensure proper year-round operation.</p> <p>Where feasible, select a sampling location at least 2 equivalent diameters downstream from and 0.5 equivalent diameters upstream from the nearest disturbance. Select the sampling location at least 2 equivalent duct diameters from the nearest control device, point of pollutant generation, air in-leakages, or other point at which a change in the pollutant concentration or emission rate occurs.</p>
Net Heating Value by Gas Chromatograph	As specified in Performance Specification (PS) 9 of 40 CFR part 60, appendix B.	<p>Follow the procedure in PS 9 of 40 CFR part 60, appendix B, except that a single daily mid-level calibration check can be used (rather than triplicate analysis), the multi-point calibration can be conducted quarterly (rather than monthly), and the sampling line temperature must be maintained at a minimum temperature of 60 °C (rather than 120 °C).</p>

(2) The MPGF system shall be operated with a flame present at all times when in use. Each burner on HP stages 1 and 2 of CP Chem's polyethylene plant MPGF must have a pilot with a continuously lit pilot flame. Additionally, each HP stage of CP Chem's ethylene plant MPGF and all HP stages, excluding stages 1 and 2 for CP Chem's polyethylene plant MPGF, must have at least two pilots with a continuously lit pilot flame. Each pilot flame must be continuously monitored by a thermocouple or any other equivalent device used to detect the presence of a flame. The time, date, and duration of any complete loss of pilot flame on any of the individual MPGF burners on HP stages 1 and 2 of CP Chem's polyethylene plant MPGF, on any of the HP stages of CP Chem's ethylene plant MPGF, and on any of the HP stages, excluding stages 1 and 2 of CP Chem's polyethylene plant MPGF, must be recorded. Each monitoring device must be maintained or replaced at a frequency in accordance with the manufacturer's specifications.

(3) The MPGF system shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. A video camera that is capable of continuously recording (*i.e.*, at least one frame every 15 seconds with time and date stamps) images of the flare flame and a reasonable distance above the flare flame at an angle suitable for visible emissions observations must be used to demonstrate compliance with this requirement. The owner or operator must provide real-time video surveillance camera output to the control room or other continuously manned location where the video camera images may be viewed at any time.

(4) The operator of an MPGF system shall install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system capable of monitoring and recording the position for each staging valve to ensure that the MPGF operates within the range of tested conditions or within the range of the manufacturer's specifications. The pressure

monitor shall meet the requirements in Table 3. Maintenance periods, instrument adjustments or checks to maintain precision and accuracy, and zero and span adjustments may not exceed 5 percent of the time the flare is receiving regulated material.

(5) Recordkeeping Requirements.

(a) All data must be recorded and maintained for a minimum of 3 years or for as long as required under applicable rule subpart(s), whichever is longer.

(6) Reporting Requirements.

(a) The information specified in sections III (6)(b) and (c) of this document below must be reported in the timeline specified by the applicable rule subpart(s) for which the MPGF will control emissions.

(b) Owners or operators shall include the following information in their initial Notification of Compliance status report:

(i) Specify flare design as a pressure-assisted MPGF. CP Chem's polyethylene plant shall also clearly note that HP stages 1 and 2 are also steam-assisted.

(ii) All visible emission readings,  $NHV_{cz}$  and/or  $LFL_{cz}$  determinations, and flow rate measurements. For MPGF, exit velocity determinations do not need to be reported as the maximum permitted velocity requirements in the General Provisions at 40 CFR 60.18(b) and 40 CFR 63.11(b) are not applicable.

(iii) All periods during the compliance determination when a complete loss of pilot flame on any stage of MPGF burners occurs, and, for HP stages 1 and 2 of CP Chem's polyethylene plant MPGF, all periods during the compliance determination when a complete loss of pilot flame on an individual burner occurs.

(iv) All periods during the compliance determination when the pressure monitor(s) on the main flare header show the MPGF burners operating outside the range of tested conditions or outside the range of the manufacturer's specifications.

(v) All periods during the compliance determination when the staging valve position indicator monitoring system indicates a stage of the MPGF should not be in operation and is or when a stage of the MPGF should be in operation and is not.

(c) The owner or operator shall notify the Administrator of periods of excess emissions in their Periodic Reports. These periods of excess emissions shall include:

(i) Records of each 15-minute block for all HP stages of CP Chem's ethylene plant MPGF and for all HP stages excluding stages 1 and 2 of CP Chem's polyethylene plant MPGF during which there was at least 1 minute when regulated material was routed to the MPGF and a complete loss of pilot flame on a stage of burners occurred, and, for HP stages 1 and 2 of CP Chem's polyethylene plant MPGF, records of each 15-minute block during which there was at least 1 minute when regulated material was routed to the MPGF and a complete loss of pilot flame on an individual burner occurred.

(ii) Records of visible emissions events (including the time and date stamp) that exceed more than 5 minutes in any 2-hour consecutive period.

(iii) Records of each 15-minute block period for which an applicable combustion zone operating limit (*i.e.*,  $NHV_{cz}$  or  $LFL_{cz}$ ) is not met for the MPGF when regulated material is being combusted in the flare. Indicate the date and time for each period, the  $NHV_{cz}$  and/or  $LFL_{cz}$  operating parameter for the period and the type of monitoring system used to determine compliance with the operating parameters (*e.g.*, gas chromatograph or

calorimeter). For CP Chem's polyethylene plant MPGF, also indicate which HP stages were in use.

(iv) Records of when the pressure monitor(s) on the main flare header show the MPGF burners are operating outside the range of tested conditions or outside the range of the manufacturer's specifications. Indicate the date and time for each period, the pressure measurement, the stage(s) and number of MPGF burners affected, and the range of tested conditions or manufacturer's specifications.

(v) Records of when the staging valve position indicator monitoring system indicates a stage of the MPGF should not be in operation and is or when a stage of the MPGF should be in operation and is not. Indicate the date and time for each period, whether the stage was supposed to be open, but was closed or vice versa, and the stage(s) and number of MPGF burners affected.

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