Alternate Method of Compliance (AMOC)
Technical Review Summary

Company	**Port Arthur LNG, LLC**	AMOC	**AMOC231 (Part 2 MPGF)**
City/County	Port Arthur, Jefferson	Project Number	373063
Project	Pressure-Assisted Multipoint Ground Flare Systems (MPGF)	Assoc NSR / Title	131769, PSDTX1456, GHGPSDTX134 and 158420, PSDTX1572, GHGPSD198 Title V not yet assigned
CN	604794834	Regulated Entity .	104517826
Primary Contact	*Jim Thompson, Manager, Permitting and Compliance* *jdthompson@sempraglobal.com*	Technical Contact	*Kerry Higgins, Vice President Technical Services,* *Khiggins@wcmgroup.com* *Stephanie Strother, Sr Project Manager* *SStrother@wcmgroup.com 281-446-7070*

Project Overview:

On November 7, 2023, the TCEQ received a request for an alternative method of control (AMOC) for pressure-assisted multipoint ground flares (MPGF) which will control emissions from new sources subject to 30 TAC Chapter 115 and as required by NSR Permits' Special Conditions. This ground flare is identified in Permit Nos. 131769 and 158420 as EPN G-FLARE. The first part of this review was the Performance Testing Protocol, which was approved on February 13, 2023 and testing completed in December 12-13, 2023. This portion of the review is part 2 of the AMOC review (received April 19, 2024) and evaluates the performance of the MPGF for final approval.

Background:

Port Arthur LNG, LLC (PALNG) was authorized for Lines 1 and 2 of a natural gas liquefaction plant and export terminal near Port Arthur, Jefferson County (Permit Nos. 131769, PSDTX1456, GHGPSDTX134) on February 17, 2016. This permit covered a ground flare system to control emissions from various tanks, loading, and planned (MSS) activities. Subsequently, the company submitted a new permit application (Permit Nos. 158420, PSDTX1572, GHGPSD198) to construct and operate new Lines 3 and 4, and upgrade Lines 1 and 2. The same "Ground Flare", EPN G-FLARE, is covered by both Permits - the contributions from Permit No. 131769 include Lines 1 and 2 while Permit No. 158420 includes the flare contributions from Lines 3 and 4.

The permit review for Permit Nos. 158420, PSDTX1572, and GHGPSD198 was contested by the Port Arthur Community Action Network (PACAN), and the permit was issued after a hearing and Commissioners' action on the Administrative Law Judges' (ALJs') Proposal for Decision (PFD) in September 2022. The contested technical issues revolved around BACT and the application's control strategies, including the use of various types of flares (standard elevated and ground flares) and respective VOC destruction and removal efficiency (DRE). The PFD determinations for the flares and subsequent permit conditions are included in Attachment A. The permit was vacated and remanded to the TCEQ by the U.S. 5th Circuit Court of Appeals on November 14, 2023 (Case No. 22-60556 PACAN vs. TCEQ) for BACT evaluation of NOx and CO on the refrigeration compression turbines – the 5th Circuit Court did not express an opinion with regards to flares. This court action remains pending before the Texas Supreme Court on the question of scope of BACT review. Regardless of this permit being vacated, the site is otherwise authorized for the MPGF to control emissions from Lines 1 and 2 under Permit Nos. 131769, PSDTX1456, and GHGPSDTX134 as EPN G-FLARE. Startup is anticipated for May 2027.

The site is also applicable to state 30 TAC Chapter 115 (BPA area) and various federal 40 CFR 60 and 63 requirements for control of VOCs, which each have corresponding flare requirements:

State *(see Attachment B)*

- Subchapter B: Division 1 Storage of VOCs;
- Subchapter B: Division 2 Vent Gas Control; and
- Subchapter C: Division 1 Loading and Unloading of VOCs.

The authority and requirements for AMOCs under state rules are in 30 TAC 115, Subchapter J, Division 1: Alternate Means of Control.

Federal *(see Attachment C)* – This section has been updated from the current Permit references due to EPA promulgation and proposals of new requirements since permit issuance.

- 40 CFR 60, Subpart Kb, Standards of Performance for VOC Storage Vessels (NSPS Kb) or Subpart Kc (NSPS Kc);
- 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC (NSPS VV) or Subpart VVa (NSPS VVa) or Supbpart VVb (NSPS VVb);

- 40 CFR 60, Subpart NNN, Standard of Performance for VOC Distillation Operations (NSPS NNN) or Subpart NNNa (NSPS NNNa); and
- 40 CFR 63, Subpart EEEE, National Emission Standards for Hazardous Air Pollutants Organic Liquids Distribution (Non-Gasoline) (MACT EEEE).

The state does not have the delegated authority to approve an alternative control system (a.k.a. AMEL) for purposes of federal regulatory compliance. Depending on start of construction or operation of applicable sources which are controlled by the MPGF systems, an AMEL application should not be needed from EPA due to recently promulgated subpart updates or pending proposed federal rule updates (see details in Attachment C). These recently updated federal rules include limits and restrictions for MPGFs, which have been followed for this review.

General

Traditionally, permits, 30 TAC 115 rules, and federal rules require flares to meet the net heating value (NHV) and flare tip velocity limits of §60.18. The particular style of flare being proposed by the company is a pressure-assisted flare system which by its nature handles flows which cannot meet these requirements, as all flows occur at sonic speeds and the NHV is much higher. EPA has developed unique criteria and recently updated federal rules for flares of this type and that is the subject of this review.

Review Summary

Flare Design and Operation:

The company has finalized the design of the proposed MPGF since the permit was approved. The MPGF system for the PALNG is manufactured by John Zink Hamworthy Combustion (Zink) and is described to be three separate systems: Acid, Wet, and Dry.

- The Acid flare is a single, low-pressure stage using a "gas assisted utility tip" to be operated in compliance with §60.18 or other applicable federal rules (and therefore not included in this review).
- The Wet and Dry pressure-assisted MPGF systems are represented as identical in several features:
  - Identical waste gas exit area and geometry.
  - Each of these systems includes "three 50% capacity sets of burners for each flare with two sets always in service".
  - Both systems utilize control valves to upstage (open additional runners and waste gas exit area) or destage (close operating runners and waste gas exit area). Upstaging occurs as the pressure rises and pressure indication in the flare system manifold reaches a corresponding upstage pressure on the system staging curve. Destaging occurs as the pressure decreases and pressure indication in the flare system manifold reaches a corresponding destage pressure on the system staging curve.
  - Both systems use Indair burners for stage 1. The Indair burners are variable area burners in where exit area of the flare tip varies with waste gas pressure in a pressure-assisted mode. All stage 1 flare systems include a dedicated pilot per burner which remain lit at all times, therefore cross-lighting requirements are not applicable. The company confirms all these pilots are included in the permit and MAERT.
  - Both systems use LRGO HC (also known as LRGO) burners in subsequent stages. All LRGO stages use two pilots per burner which remain lit at all times. The company confirms all these pilots are included in the permit and MAERT.
  - The Wet Flare details includes Stage 1 with three (3) Indair burners and Stages 2 – 5 131 LRGO burners.
  - The Dry Flare details include Stage 1 with three (3) Indair burners and Stages 2 –9 417 LRGO burners.

Control Scenarios

The gas streams and operational conditions represented various routine operations, planned MSS activities and upset events controlled by the high-pressure stages of the Wet and Dry flare:

- The liquid condensate tanks;
- Process vents from the Demethanizer and Debutanizer Columns PSVs; and
- The liquid condensate tanks and condensate truck loading.
- PRDs controlled by ground flare.

Performance Demonstration

Consistent with EPA's MPGF Framework to establish effectiveness for the flare burner types, testing was addressed: 1) flame stability, 2) smokeless operation, 3) cross-lighting, and 4) destruction removal efficiency/combustion efficiency (DRE/CE), all under the most challenging, worst-case waste gas mixtures (most complex) and pressures (low and high). EPA has established expectations for this test protocol in the Framework published in 2018. The more recent federal rules (40 CFR 60 and 63 as noted) have updated the expectations,

operational conditions, and monitoring for these flares. Since this review overlaps promulgation of the federal rules, both sets of criteria have been used during this MPGF review.

Indair burners

The application uses engineering assessment to demonstrate 1) stability, 3) smokeless, and 4) DRE as outlined in the Framework and MACT Rules (see Attachments). The Indair burners each have a pilot, so (2) cross-lighting is not relevant.

The Indair burners have been tested in multiple previous projects and four sets of test results were provided. Zink's summary states "t*esting included above shows stability and 99% or greater DRE on 800 btu/scf N2/NG. In addition, the engineering assessment shows 100% smokeless performance on propane on a range of pressures from 4.6 psig to 23 psig. These conditions represent an equal or greater difficulty test than conditions shown in the flare data sheet for emissions, smokeless and stability performance*". All test results also demonstrate that the Zink burners should achieve at least 98% DRE (all results were > 99.2% and overall averaged 99.85%). Port Arthur LNG provided composition and emission scenarios which cover worst-case expected operations and matched those conditions previously tested.

LRGO burners.

The LRGO burners were tested for 1) flame stability, 2) cross-lighting, and 3) smokeless operation. The LRGO pressure-assisted flare burners were tested on the December 12th and 13th, 2023 at John Zink's Testing Center in Tulsa, OK. All testing was performed using calibrated equipment per the test protocol, which was included in the application, along with the full report. Testing was performed by Spencer Randolph (John Zink) and Cliff Pugh (John Zink). Testing was witnessed by Mike Flint (John Zink), Mehul Panchal (Bechtel), Shawn Pinkall (Bechtel), Cheryl Oliver (Sempra) and Fabio Valle (Sempra).

The performance of the flare systems' DRE is justified using the engineering analysis approach as outlined in the Framework and MACT Rules (see details below).

1. Stability was tested using a single LRGO burner with 800 Btu/scf natural gas/nitrogen fuel mix and a minimum burner pressure of 1.32 psig which matches the minimum burner circumstances expected in the field. The burners were also tested for the most challenging testing scenario with the highest design pressure of the burners at 17 psig. Testing showed stable flames under all these conditions.
2. Cross-light testing was conducted even though the burners are less than 6 feet apart (see §60.669a(i)(5) testing exemption). The typical spacing at the PALNG site is 5' 11" for both Wet and Dry flares. The testing occurred with three burners at the lowest heating value a gas composition of 800 Btu/scf natural gas/nitrogen, and a minimum burner pressure up to 10 psig based on the Dry flare staging curve. The LRGO burners demonstrated cross-light performance at the most challenging condition.
3. Smokeless operation was tested with a propane/natural gas mixture of approximately 2000 Btu/scf at a minimum burner pressure of 1.3 psig. This gas mixture represents the most difficult to burn ("AGHA-Warm" operating scenario) and will consist of 23.5% Tulsa natural gas and 76.5% propane.
   Note: Data that logged includes process conditions (fuel flows, fuel pressure, etc.) and meteorological measurements. The testing should be performed to cover worst-case compositions and at minimum or maximum design rates to demonstrate effective performance and cover the most challenging circumstances.
4. The DRE evaluation is based on an engineering assessment based on multiple previous test results for the LRGO burners from multiple previous Zink clients. For the LRGO burners, testing from Dow and Marathon Petroleum was referenced as these test results were relied upon for federal AMEL approvals (EPA Docket KD EPA-HQ-OAR-2014-0738). References: Dow Report (EPA-HQ-OAR-2014-0738-0008) https://www.regulations.gov/document/EPA-HQ-OAR-2014-0738-0008; Dow Report Supplement #1 https://www.regulations.gov/document/EPA-HQ-OAR-2014-0738-0009; Dow Report Supplement #2 https://www.regulations.gov/document/EPA-HQ-OAR-2014-0738-0010; Marathon Report https://www.regulations.gov/document/EPA-HQ-OAR-2014-0738-0011). The application represents that these tests were performed on the exact burner style and same configuration as PALNG and were performed under more challenging conditions than those expected at PALNG and demonstrated ≥ 99% effectiveness.

See Project No. 366277 for engineering analysis and test protocol background documents. See current project for copy of test report on LRGO burners.

AMOC Plan Conditions

The Plan conditions reference and rely on federal standards and rules (see Attachment D).

Name-Title	Date	Comments/ Resolutions
Jim Thompson, Manager, Permitting and Compliance	5/13/2024 – 6/10/2024	Clarify wording for LRGO burner stage cross-lighting. Approved 6/10/2024.

Public Notice Information - 30 TAC § 115.915

Rule Citation	Requirement	Details
115.914(3)	Date Preliminary AMOC Plan Approval:	June 17, 2024
115.915	Dates Published:	TBD
	Publication Name:	TBD
	Comment Period:	TBD
	Date Affidavits/Copies Received:	TBD
	Date AMOC Availability Certification:	TBD
	Publicly Available location	Effie & Wilton Hebert Public Library, 2025 Merriman Street, Port Neches, Jefferson County
115.915(10)	Public Comments Received?	TBD
115.914(4)	Consideration of Comments:	TBD

Attachments

Attachment A – Authorizations
Permit Nos. 131769, PSDTX1456, GHGPSDTX134 & 158420, PSDTX1572, GHGPSDTX198
Representations for MPGF in Permit Applications, ALJs' PFD and Court Actions
Attachment B - 30 TAC Chapter 115 Applicable Requirements and AMOC requirements
Attachment C - Federal Rules Applicability for Flare Control (NSPS Kb, Kc, VVb, and NNNa; MACT EEEE & CC)
Attachment D – Draft AMOC Plan General Conditions

Request for Comments

From	Program	Contact		Comments/ Resolutions
NSR:	**ENERGY**	Chris Loughran, P.E., Technical Specialist Matthew Ray, Team Leader	5/15/2024 – 5/22/2024	Minor comments incorporated.
OCE	**Support**	Michael Miller	5/15/2024 -	No comments.
Region	**10**	Sarah Kirksey	*1/12/2024-1/14/2024* 5/15/2024 – 5/20/2024	Conditions should include Region may request performance testing if operational problems occur. *This requirement is included in Condition 4 of the AMOC Plan.* *No additional comments.*
EPA	**Region 6**	Diana Lundelius	*11/6/2023 - 11/8/2023*	Follow MPGF Framework & updated federal rules, only send copy of final AMOC determination. No additional review required by EPA. *All EPA guidelines and proposed rules followed in review.*

CONCLUSION:

This MPGF AMOC meets all federal regulations and has been demonstrated to be equivalent or better than standard flares for control of VOCs and GHG emissions. This AMOC is recommended to be approved for opportunity for public comment.

Anne Inman, P.E.
Project Reviewer

6/10/2024
Date

Kristyn Campbell
Energy Section Manager

Date

ATTACHMENT A
Authorizations

131769, PSDTX1456, GHGPSDTX134

Special Conditions

Federal Applicability

2. These facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources (NSPS), Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
   A. Subpart A: General Provisions.
   B. Subpart Kb: The liquid condensate storage tanks will be subject to Standards of Performance for Volatile Organic Liquids Storage Vessels.
   D. Subpart NNN: The demethanizer and debutanizer column vents will be subject to Standards of Performance for Volatile Organic Compounds - Distillation Operations.

3. These facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63:
   A. Subpart A: General Provisions.
   C. Subpart EEEE: The liquid condensate tanks and condensate truck loading will be subject to National Emission Standard for Hazardous Air Pollutants for Organic Liquid Distribution (Non-Gasoline)

Emissions Standards and Operating Specifications

6. The marine flare (emission point number [EPN] M-FLARE) and the ground flare (EPN G-FLARE) shall be designed and operated in accordance with the following requirements:
   A. The flare system shall be designed such that the combined gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal and, anticipated scenarios identified in the air permit application.
   B. Fuel for the flare pilots is limited to fuel gas (as identified in the permit application), boil-off gas, pipeline quality natural gas, or a blend of these fuels.
   C. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, flame-ionization rod, acoustical monitor, infrared monitor, or other equivalent technology. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to within manufacturer's specifications and shall be calibrated at a frequency in accordance with the manufacturer's specifications.
   D. The flare shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours.
   E. The permit holder shall install a continuous, pressure and temperature compensated, flow monitor that provides a record of the vent stream flow to the flare in units of standard cubic feet. The flow monitor shall be installed in the vent stream such that the total vent stream to flare is measured. Flow measurements shall be taken continuously, and values shall be recorded on an average one-hour basis. The flow monitor shall be calibrated according to manufacturer's instructions, or shall have a calibration check by using a second calibrated flow measurement device, annually to meet the following accuracy specifications: the flow monitor shall be +/- 5.0%, temperature sensor shall be +/- 2.0% at absolute temperature, and pressure sensor shall be +/- 5.0 mmHg. The flow monitor shall operate at least 95% of the time when the flare is operational, averaged over a rolling twelve (12) month period.
   F. Vent gas (including pilot gas) sent to the marine flare shall not exceed 384 million standard cubic feet per year (MMscf/year), based on a rolling 12-month total. Vent gas (including pilot gas) sent to the ground flare shall not exceed 885 MMscf/year, based on a rolling 12-month total. Additionally, planned MSS vent gas (including pilot gas) sent to the ground flare shall not exceed 4,074 MMscf/year, based on a rolling 12-month total. These limits do not include vent gas sent to the flare systems from emergency or upset conditions.

Alternative Means of Compliance (AMOC)

24. If a request for an AMOC is granted by the regulating authority (TCEQ or EPA) for the ground flare (EPN G-FLARE), the requirement of the approved AMOC shall supersede the requirements of Special Conditions No. 6. The permit holder shall incorporate these conditions into the permit through an alteration no later than 90 days after approval of the AMOC.

Emission Sources - Maximum Allowable Emission Rates

Emission Point No.	Source Name	Air Contaminant	Emission Rate lb/hr	Emission Rate TPY
G-FLARE	Ground Flare	NOx	14.22	62.29
		CO	28.39	14.03
		VOC	0.93	4.06
		SO_2	0.08	0.06
G-FLARE	Ground Flare (MSS)	NOx	1,327.22	286.68
		CO	2,649.63	572.32
		VOC	89.03	19.23
		SO_2	6.73	1.45

Permit 158420, PSDTX1572, GHGPSDTX198

Special Conditions

Federal Applicability

2. These facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources (NSPS), Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
   A. Subpart A: General Provisions.
   B. Subpart Kb: The liquid condensate storage tanks will be subject to Standards of Performance for Volatile Organic Liquids Storage Vessels.
   C. Subpart VV: The condensate storage system will be subject to Standards of Performance for Equipment Leaks of Volatile Organic Compounds (VOC).
   D. Subpart NNN: The demethanizer and debutanizer column vents will be subject to Standards of Performance for Volatile Organic Compounds - Distillation Operations.

3. These facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63:
   A. Subpart A: General Provisions.
   C. Subpart EEEE: The liquid condensate tanks and condensate truck loading will be subject to National Emission Standard for Hazardous Air Pollutants for Organic Liquid Distribution (Non-Gasoline).

Emissions Standards and Operating Specifications

6. The marine flare (emission point number [EPN] M-FLARE) and the ground flare (EPN GFLARE) shall be designed and operated in accordance with the following requirements:
   A. The flare system shall be designed such that the combined gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal and anticipated scenarios identified in the air permit application.
   B. Fuel for the flare pilots is limited to fuel gas (as identified in the permit application), boil-off gas, pipeline quality natural gas, or a blend of these fuels.
   C. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, flame-ionization rod, acoustical monitor, infrared monitor, or other equivalent technology. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to within manufacturer's specifications and shall be calibrated at a frequency in accordance with the manufacturer's specifications.
   D. The flare shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours.
   E. The permit holder shall install a continuous, pressure and temperature compensated, flow monitor that provides a record of the vent stream flow to the flare in units of standard cubic feet. The flow monitor shall be installed in the vent stream such that the total vent stream to flare is measured. Flow measurements shall be taken continuously, and values shall be recorded on an average one-hour basis.
      The flow monitor shall be calibrated according to manufacturer's instructions or shall have a calibration check by using a second calibrated flow measurement device, annually to meet the following accuracy specifications: the flow monitor shall be +/- 5.0% of the design flow, temperature sensor shall be +/- 2.0% at absolute temperature, and pressure sensor shall be +/- 5.0 mmHg.
      The flow monitor shall operate at least 95% of the time when the flare is operational, averaged over a rolling twelve (12) month period.
   F. Vent gas (including pilot gas) sent to the marine flare shall not exceed 384 million standard cubic feet per year (MMscf/year), based on a rolling 12-month total. Vent gas (including pilot gas) sent to the ground flare shall not exceed 753 MMscf/year, based on a rolling 12-month total. Additionally, planned MSS vent gas (including pilot gas) sent to the ground flare shall not exceed 5245 MMscf/year, based on a rolling 12-month total. These limits do not include vent gas sent to the flare systems from emergency or upset conditions.

11. Tanks and condensate loading shall be operated and maintained according to the following
   B. The condensate storage tanks, and condensate truck loading operations shall be routed to the ground flare.
      (1) The permit holder shall maintain and update a monthly emissions record which includes calculated emissions of VOC from all loading operations over the previous rolling 12-month period. The record shall include the loading spot, control method used, quantity loaded in gallons, name of the liquid loaded, vapor molecular weight, liquid temperature in degrees Fahrenheit, liquid vapor pressure at the liquid temperature in psia, liquid throughput for the previous month and rolling 12 months to date. Records of VOC temperature are not required to be kept for liquids loaded from unheated tanks which receive liquids at or below ambient temperatures. Emissions shall be calculated using the equations provided in the PI-1 dated September 12, 2019, and subsequent updates.
      (2) All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections.
      (3) Each tank truck shall be leak checked and certified annually in accordance with Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Subpart XX. The permit holder shall not allow a tank truck to be filled unless it has passed a leak-tight test within the past year as evidenced by a certificate which shows the date the tank truck last passed the leak-tight test required by this condition and the identification number of the tank truck.

Alternative Means of Compliance (AMOC)

24. If a request for an AMOC is granted by the regulating authority (TCEQ or EPA) for the ground flare (EPN G-FLARE), the requirement of the approved AMOC shall supersede the requirements of Special Conditions No. 6. The permit holder shall incorporate these conditions into the permit through an alteration no later than 90 days after approval of the AMOC.

Emission Sources - Maximum Allowable Emission Rates

Emission Point No.	Source Name	Air Contaminant	Emission Rate lb/hr	Emission Rate TPY
G-FLARE	Ground Flare	NOx	12.24	52.94
		CO	24.49	105.69
		VOC	3.24	5.32
		SO_2	0.07	0.33
		PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
G-FLARE	Ground Flare (MSS)	NOx	1,706.74	368.66
		CO	3,407.29	735.97
		VOC	114.49	24.73
		SO_2	8.66	1.87
		PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55

Representations

40 CFR 60, Subpart Kb, Standards of Performance for VOC Storage Vessels (NSPS Kb)

The liquid condensate tanks will use a closed vent system and control device (i.e., Ground Flare) to comply with the standard for VOC requirements in accordance with §60.112b(a)(3). The Ground Flare will be designed and operated to reduce inlet VOC emissions by at least 95% as required according to §60.112b(a)(3)(ii). PALNG will meet the applicable testing, monitoring, recordkeeping and reporting requirements of Subpart Kb. The diesel, amine, hot oil, slop oil and process wastewater storage tanks will store liquids with a maximum true vapor pressure < 3.5 kilopascals (kPa) (~ 0.5 psia) and are, therefore, not subject to Subpart Kb pursuant to §60.110b(b). Although the capacity of the LNG storage tanks is > 151 m3 gallons, the true vapor pressure of LNG at the working temperature of the LNG storage tanks (~ -260°F) is < 3.5 kPa; therefore, the LNG storage tanks will not be subject to Subpart Kb. Ethane Storage Tank and four (4) Propane Storage Tanks are pressure vessels designed to operate in excess of 204.9 kPa (approximately 29.7 psia) and without emissions to the atmosphere are exempt from NSPS Part 60 Subpart Kb.

40 CFR 60, Subpart NNN, Standard of Performance for VOC Distillation Operations (NSPS NNN)

process vents from the Demethanizer and Debutanizer Columns are subject to the standards outlined in §60.662(b). The process vents are equipped with PSVs that are normally closed, but when they relieve the process vents are routed to the Ground Flare for control. Therefore, the Ground Flare will be designed and operated in accordance with 40 CFR 60.18.

40 CFR 63 , Subpart EEEE, National Emission Standards for Hazardous Air Pollutants (MACT EEEE) *Last amended 8/12/2020*

The liquid condensate tanks and condensate truck loading will be subject to Subpart EEEE. PALNG will comply with the applicable emission limitations, operating limits, and work practice standards pursuant to Subpart EEEE.

The ALJs' PFD and the Commissioners' decision *was based on the BACT determination for flares:*

BACT for Flares

87. PALNG's flare system will consist of one multi-point ground flare, enclosed by a 50-foot wall on all sides, and one 135-foot tall marine flare.

88. PALNG's flares will be operated with a flame present at all times and/or will have a constant pilot flame, which will be continuously monitored by thermocouple, flame-ionization rod, acoustical monitor, infrared monitor, or other equivalent technology. Each monitoring device will be accurate to within the manufacturer's specifications; and the monitoring will ensure the flares operate as permitted.

89. PALNG will meet the requirements of 40 C.F.R. § 60.18 and maintain good combustion practices, and will limit NO_x emissions from the flares to 0.138 lb/MMBtu (pounds per metric million British thermal unit).

90. PALNG's flares are designed with a destruction and removal efficiency of 99% for hydrocarbons with three or fewer carbon atoms and 98% for hydrocarbons with more than three carbon atoms.

91. PALNG's proposed flares are BACT for the types of uses proposed.

U.S. 5th Circuit Court of Appeals on Petitions for Rehearing and Rehearing En Banc **,** last action 2/16/2024

"The petition raises the question of whether Texas's definition of "best available control technology" encompasses air pollution control methods that TCEQ has permitted but that are not yet in operation. Specifically, we are asked to determine whether the term "proven to be operational" means currently in operation or capable of operation. Because we cannot confidently make an *Erie* guess, we CERTIFY the question to the Supreme Court of Texas.

> Does the phrase "has proven to be operational" in Texas's definition of "best available control technology" codified at Section 116.10(1) of the Texas Administrative Code require an air pollution control method to be currently operating under a permit issued by the Texas Commission on Environmental Quality, or does it refer to methods that TCEQ deems to be capable of operating in the future?

Attachment B
30 TAC Chapter 115

Citation	Description	Review
	Subchapter B: Division 1 Storage of VOCs	
§115.110	**Applicability and Definitions**	
§115.110(a)	Except as specified in §115.111 this division applies to any storage tanks in which VOC are placed, stored, or held that is located in	*This rule is applicable to the tanks at this site.*
§115.110(a)(1)	BPA	
§115.112	**Control Requirements**	
§115.112(a)	The following apply in BPA… *A.*	*Tanks at the site are applicable to this requirement.*
§115.112(a)(1)	No person shall place, store or hold in any storage tank any VOC unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss or is in compliance with Table I(a) (VOC) or Table II(a) for crude and condensate.	
§115.112(a)(3)	Vapor control systems used as a control device on any storage tank must maintain a minimum control efficiency of 90%. If a flare is used, it must be designed and operated in accordance with 40 CFR §60.18(b)-(f) and be lit at all times when VOC vapors are routed to the flare.	*Pressure-assisted stages of MPGF cannot meet §60.18 NHV or $V_{tip\ max}$. This AMOC was reviewed to demonstrate the MPGF is > 90% DRE.*
§115.113	**Alternate Control Requirements**	
§115.113	Alternate methods of demonstrating and documenting continuous compliance with applicable control requirements or exemption criteria in this division may be approved by the ED in accordance with §115.910 if emission reductions are demonstrated to be substantially equivalent.	*This rule allows the ED to review this pressure-assisted MPGF for storage tank controls.*
§115.115	**Monitoring Requirements**	
§115.115(a)	The following monitoring requirements apply in BPA. An affected o/o shall install and maintain monitors to measure operational parameters of any of the following control devices installed to meet applicable control requirements. Such monitors must be sufficient to demonstrate proper functioning of those devices to design specifications.	*Sufficient monitoring requirements are included this AMOC.*
§115.115(a)(6)	For control device not listed in this subsection, the o/o shall continuously monitor one or more operational parameters sufficient to demonstrate proper functioning of the control device to design specifications.	
§115.116	**Testing Requirements**	
§115.116(a)	The testing requirements apply in the BPA	*This review is establishing case-specific testing requirements.*
§115.116(a)(2)	A flare used to comply with the control requirements in §115.112(a)(3) must meet the design verification test requirements in 40 CFR §60.18(f)	
	Subchapter B: Division 2 Vent Gas Control	
§115.121	**Emission Specifications**	
§115.121(a)	For all persons in the … BPA, … the following emission specifications shall apply. *B.*	*The process vent streams are applicable to SIP control requirements.*
§115.121(a)(1)	No person may allow a vent gas stream containing volatile organic compounds (VOC) to be emitted from any process vent, unless the vent gas stream is controlled properly in accordance with §115.122(a)(1) of this title (relating to Control Requirements).	
§115.122	**Control Requirements**	
§ 115.122(a)	For all persons in the BPA… the following control requirements shall apply. *C.*	*Pressure-assisted stages of MPGF cannot meet §60.18 NHV or $V_{tip\ max}$. This AMOC will be reviewed to demonstrate the MPGF is > 90% DRE. Testing and federal rules ensure smokeless operation under all anticipated conditions and continuous pilots.*
§ 115.122(a)(1)	Any vent gas streams affected by §115.121(a)(1) of this title (relating to Emission Specifications) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million by volume (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices):	
§ 115.122(a)(1)(B)	In a smokeless flare that is lit at all times when VOC vapors are routed to the flare *D.*	
§115.123	**Alternate Control Requirements**	
§115.123(a)	The alternate control requirements for vent gas streams in BPA… *E.*	*See below.*
§115.123(a)(1)	Alternate methods of demonstrating and documenting continuous compliance with applicable control requirements or exemption criteria in this division may be approved by the ED in accordance with §115.910 if emission reductions are demonstrated to be substantially equivalent.	
§ 115.125	**Testing Requirements** *F.*	*This AMOC has reviewed various testing to demonstrate performance of the flare system.*
	Compliance with the emission specifications, vapor control system efficiency, and certain control requirements and exemption criteria of §§115.121 - 115.123 and 115.127 of this title (relating to Emission Specifications; Control Requirements; Alternate Control Requirements; and Exemptions) shall be determined by applying one or more of the following test methods and procedures, as appropriate, when specifically required within this division, when required by the executive director under §101.8 of this title (relating to Sampling), or when	

	the owner or operator elects to conduct testing of one or more vent gas streams	
§ 115.125(3)	Performance Requirements for flares and vapor combustors	
§ 115.125(3)(A)	For flares TM 22 is used for visual determination of fugitive emissions from material sources and smoke emissions.	
§ 115.125(3)(B)	For flares, additional test method requirements are described in 40 CFR §60.18(f) unless the EPA or ED has granted a waiver for such testing requirements.	
§ 115.125(3)(C)	Flares in BPA shall comply with the performance test requirements of 60.18(b), unless EPA or the ED has granted a waiver from such testing requirements.	
§ 115.125(3)(E)	Compliance with the requirements of 60.18(b) will be considered to demonstrate compliance with the emissions specifications and control efficiency requirements of §§ 115.121 and 115.122.	
§ 115.126	**Monitoring and Recordkeeping Requirements**	
	The owner or operator of any facility which emits volatile organic compounds (VOC) through a stationary vent in Beaumont-Port Arthur, …shall maintain the following information at the facility for at least five years. The owner or operator shall make the information available upon request to representatives of the executive director, the United States Environmental Protection Agency, or any local air pollution control agency having jurisdiction in the area.	*Records and test reports shall be maintained for at least 5 years.*
§ 115.126(1)	Vapor control systems. For vapor control systems used to control emissions in Victoria County and in the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas from vents subject to the provisions of §115.121 of this title (relating to Emission Specifications), records of appropriate parameters to demonstrate compliance, including:	
§ 115.126(1)(B)	In the BPA, the requirements specified in 60.18(b) and Chapter 111 for flares	
§ 115.126(2)	Test results. A record of the results of any testing conducted in accordance with §115.125 of this title (relating to Testing Requirements).	
§115.126(7)	Additional flare requirements. The o/o of a facility that uses a flare to meet requirements of 115.122(a)(2) shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a heat-sensing device, such as ultraviolet beam sensor or thermocouple, at the pilot light to indicate continuous presence of a flame.	
	Subchapter C: Division 1 Loading and Unloading of VOCs	
§115.212	**Control Requirements**	
§115.212(a)	The o/o of each VOC transfer operation, transport vessel, and marine vessel in the BPA…shall comply with the following control requirements	*The marine loading streams are applicable to SIP control requirements.*
§115.212(a)(1)	General VOC loading. At VOC loading operations other than gasoline [loading], vapors from the transport vessel caused by the loading of VOC with a true vapor pressure ≥ 0.5 psia under actual storage conditions must be controlled by	
§115.212(a)(1)(A)	A vapor control system which maintains a control efficiency of at least 90% *G.*	*This AMOC has been reviewed to demonstrate the MPGF is > 90% DRE.*
§115.213	**Alternate Control Requirements**	
§115.213(a)	Alternate methods of demonstrating and documenting continuous compliance with applicable control requirements or exemption criteria in this division may be approved by the ED in accordance with §115.910 if emission reductions are demonstrated to be substantially equivalent.	*See below.*
§115.215	**Approved Test Methods**. Compliance with the emission specifications, vapor control *G.* system efficiency, and certain control requirements…must be determined by applying one or more of the following methods and procedures as applicable	*Pressure-assisted stages of MPGF cannot meet §60.18 NHV or $V_{tip\ max}$. This AMOC was reviewed to demonstrate the MPGF is > 90% DRE.*
§115.215(3)	Performance Requirements for flares and vapor combustors	
§115.215(3)(A)	For flares, the performance test requirements of 60.18(b)	
§115.216	**Monitoring and Recordkeeping Requirements**	
§115.216(1)	Vapor control systems. For vapor control systems used to control emissions from VOC transfer operations, records of appropriate parameters to demonstrate compliance, including	*This review is establishing case-specific requirements consistent with current federal rules and guidelines.*
§115.216(1)(B)	Requirements specified in 60.18(b) for flares	

30 TAC Chapter 115, Subchapter J, Division 1: Alternate Means of Control

Rule Citation	Requirement	Review
§115.910	**Availability of Alternate Means of Control**	
§115.910(a)	Any person … may request approval of an AMOC…. AMOC plan shall be approved if it is demonstrated that the plan meets all applicable criteria and procedures of §§115.911 - 115.913, 115.915, and 115.916	*On November 7, 2023 Port Arthur LNG submitted the first part of an AMOC for pressure-assisted stages of the MPGF. Part 2 of the application was submitted on April 19, 2024.*
§115.910(b)	An AMOC applicant may apply to the executive director for a waiver of portions of §115.913 … §115.914 and §115.915	*Port Arthur LNG did not request waiver of any requirements other than annual emissions which are not applicable.*
§115.910(c)	Application for an AMOC plan does not stay enforcement of regulations of this chapter.	
§115.910(d)	Any violation of an AMOC plan shall be subject to enforcement action as a violation of this chapter.	

§115.911	**Criteria for Approval of Alternate Means of Control Plans**	
	An AMOC plan shall be approved if it **meets each of the following criteria**, as applicable:	
§115.911(1)	All facilities covered by the AMOC plan are and remain in the same account number	*All facilities are at the same site.*
§115.911(2)	The AMOC plan must propose annual emission limits …[which] results in net emissions reductions equal to or greater than reductions that would be achieved if each source complied with all applicable requirements	*The AMOC for the MPGF proposes equivalent control and emission reductions, the currently permit was issued relying on at least 98% control and will not have any greater emissions than those authorized.*
§115.911(3)-(8)	*Baseline emission limits*	*N/A*
§115.911(9)	The AMOC plan must establish emission limits and/or control requirements for all sources in the plan which render the proposed annual emission limits enforceable.	*The AMOC Plan will have specific conditions to ensure enforceability.*
§115.911(10)	The AMOC **plan must include all necessary and appropriate provisions for monitoring, testing, reporting, and recordkeeping** as specified by the executive director. The frequency of AMOC required monitoring, testing, reporting, and recordkeeping shall be sufficient to reasonably ensure compliance with applicable emission limits and/or control requirements. The monitoring, testing, reporting, and recordkeeping shall be at least as reliable, readily retrievable, and retained for a comparable period of time as the underlying requirements of this chapter	*Enforceable emission limits and demonstrations of compliance was included in the AMOC Plan. Including but not limited to 800 Btu/scf NHVcz minimum (flow rate, NHV_{stream}, pilot, smokeless operation).*
§115.912 (a)-(f)	**Calculations for Determining Alternate Means of Control Reductions**	*N/A*
§115.913	**Procedures for Alternate Means of Control Plan Submittal**	
§115.913(a)	All persons requesting an AMOC plan …shall submit a proposed AMOC plan and demonstration to the executive director; copies …to the appropriate regional office… any local air pollution control program with jurisdiction …and copies to the EPA regional office	*Copies of the AMOC requests were submitted to the Region 10 office and EPA (there is no local program for this site).*
§115.913(b)(1)	The plan shall include AMOC applicant name with mailing address, site name with physical address, account number, contact person including address and telephone number	*All identifying information was included in the initial request.*
§115.913(b)(2)	The plan shall include an identification and a description of the sources involved in the AMOC plan including any applicable air permit numbers, plot plans, detailed flow diagrams, EPNs, and FINs; an identification of the provisions of this chapter that are applicable; and an identification of promulgated provisions of this chapter that will be applicable to such sources; and a description of normal operating conditions	*The permit file representations were initially reviewed. The company provided supplemental information on the actual design and anticipated operations of the flare. Supplemental information included a description of normal operating conditions (routine & MSS), potential upset conditions, or correlations to testing or previously tested scenarios.*
§115.913(b)(3)	The plan shall include quantification of the AMOC plan sources' actual emissions	*The plan specifies the MPGF will obtain an equivalent 98% VOC DRE to §60.18 flares. Actual emissions are likely to be lower because the MPGF is most likely going to perform in the 99.5% DRE range.*
§115.913(b)(5)	The plan shall include specification of emission limitation(s) and control requirement(s) to be applicable to each source affected by the proposed AMOC plan	*Enforceable emission limits and demonstrations of compliance was included in the AMOC Plan. The monitoring, testing, recording, and recordkeeping rely on continuous monitors, periodic records, and other stipulations sufficient to ensure compliance and is equivalent or better than those in the underlying requirements.*
§115.913(b)(6)	The plan shall include a description of the compliance methodologies, including monitoring, testing, reporting, and recordkeeping measures, that will be used to enforce the emission limitation(s) and/or control requirement(s) applicable to each source affected by the AMOC plan	
§115.913(b)(7)	The plan shall include a sample of reporting and recordkeeping forms to be utilized	
§115.913(b)(8)	The plan shall include a demonstration that the AMOC plan satisfies each applicable requirement of §115.911	*The AMOC application included a demonstration on all §115.911 requirements.*
§115.913(b)(9)	The plan shall include a list containing the name, address, and telephone number of any air pollution control program with jurisdiction over the account affected by the AMOC	*There is no local program applicable to this site.*
§115.913(b)(10)	The plan shall include any other relevant information necessary to evaluate the merits and/or enforceability of the AMOC plan, as may be requested by the ED	*The application includes all necessary supporting documentation.*
§115.913(c)	All representations with regard to the AMOC plan, as well as any provisions attached to the AMOC plan, become conditions upon which the subsequent AMOC plan is issued. It shall be unlawful for any person to vary from such representation or provision if the change will cause a change in the method of control of emissions, the character of the emissions, or will result in an increase in the discharge of the various emissions. It shall also be unlawful for any AMOC holder to vary from the emission limits, control requirements, monitoring, testing, reporting, or recordkeeping requirements of an approved AMOC plan	*Applies in all cases.*

§115.913(d)	Applications to amend or revise an AMOC plan shall be submitted subject to the requirements of this chapter	*N/A*
§115.914	**Preliminary Determination**	
	Upon a preliminary determination to approve or deny the proposed alternative means of control (AMOC) plan, the executive director shall, in writing, so notify the submitter of the plan, any local air pollution control program with jurisdiction over the account affected by the AMOC plan, and the EPA regional office	*The applicant and affected agencies will be copied on the preliminary determination.*
§115.914(1)	If the executive director makes a preliminary determination to approve the AMOC plan, then this notice shall include a copy of the AMOC plan as preliminarily approved	
§115.914(2)	If the executive director makes a determination to deny the AMOC, then the notice shall include a description of the reasons for such determination of denial. This determination shall constitute a final action of the executive director appealable to the commission as provided in paragraph (7) of this section	
§115.914(3)	Upon receipt of notice from the executive director that the AMOC plan has received preliminary approval, the AMOC applicant, at the applicant's own expense, shall cause to be published notice of the applicant's intent to obtain an AMOC plan and of the opportunity to submit written comments. Notice under §115.915 (Public Notice Format)	*The applicant will publish notice as instructed.*
§115.914(4)	The executive director shall consider and prepare a written response to all significant and timely written comments filed in connection with an AMOC plan.	
§115.914(5)	In response to the written comments, the executive director may modify the provisions of the AMOC plan, deny the AMOC plan, or approve AMOC without changes.	
§115.914(6)	The executive director shall send written notice of his/her final determination concerning each AMOC to the submitter, the EPA regional office, any local pollution control program with jurisdiction over the account affected by the AMOC plan, and to each person who submitted timely written comments. Such notice shall include final AMOC provisions, a copy of the response to comments, and an announcement of the opportunity to appeal the executive director's determination to the commission. The notice required shall be sent by a means evidencing receipt	*Included in final action letter.*
§115.914(7)	Any person entitled to notice under (6) may, within 15 days, file with the ED an appeal of the final determination. Such appeal shall be considered at the next regularly scheduled meeting of the commission for which adequate notice may be made. Based on arguments submitted to the commission during such appeal, the commission may remand the AMOC determination to the executive director, deny the AMOC plan, or issue the AMOC plan unchanged	
§115.914(8)	Within 45 days of final approval of the AMOC plan by the executive director, EPA may notify the commission of EPA's disapproval of the executive director's final decision. Such notification shall be in writing and shall include a statement of the reason(s) for the disapproval and a specific listing of changes to the AMOC plan that must be made in order to overcome the disapproval. Any time prior to the expiration of the 45-day period, EPA may notify the executive director that no disapproval is forthcoming. Upon receipt of a timely EPA disapproval, the ED shall void or revise the AMOC plan, and reissue the notice under (6)	
§115.914 (9)-(11)	If no appeal of the executive director's decision to approve the AMOC plan is filed pursuant to paragraph (7) of this section, the AMOC plan becomes effective upon the acceptance of the plan by EPA as described in paragraph (11) of this section. If an appeal of the executive director's decision is filed, the AMOC plan becomes effective upon the latter of the acceptance of the AMOC by the commission or AMOC plan by EPA. EPA acceptance is defined as explicit approval of the AMOC plan by EPA, notification by EPA to the executive director that no EPA disapproval is forthcoming, or failure of EPA to file notice of disapproval within 45 days of ED's final decision.	
§115.915	**Public Notice Format**	*This project has been determined to be technically complete.*
§115.915(a)	Public notice shall be published in the public notice section of two successive issues of a newspaper of general circulation in or closest to the municipality in which the facility with the account affected by the AMOC plan is located.	***Public Notice is being authorized by this action.***
§115.915(b)	Public notice shall contain the following information:	*The contents of the notice will include all information required.*
§115.915(b)(1)	AMOC plan application number assigned by the executive director;	
§115.915(b)(2)	AMOC applicant name;	
§115.915(b)(3)	type of facility;	
§115.915(b)(4)	a description of the location of the facility;	
§115.915(b)(5)	a brief description of the AMOC plan;	
§115.915(b)(6)	the executive director's preliminary determination to approve such plan;	
§115.915(b)(7)	the locations and availability of copies of the proposed AMOC plan, related documentation, and the executive director's preliminary analysis of the plan (including the Austin and appropriate regional offices, any local pollution control program with jurisdiction over the account affected by the AMOC plan, and the EPA regional office);	
§115.915(b)(8)	an announcement of the opportunity to submit written comments on the AMOC	
§115.915(b)(9)	the length of the public comment period (30 days from the final publication of this notice);	
§115.915(b)(10)	the procedure for submission of written public comments concerning the proposed AMOC plan; and	

§115.915(b)(11)	the name, address, and phone number of the regional office to be contacted for further information.	
§115.915(c)	The AMOC plan submitter shall provide proof of adequate notice to the executive director, EPA, and any local pollution control program with jurisdiction over the account affected by the AMOC plan before the executive director may take final action on the AMOC plan.	*Pending confirmation after publication.*
§115.916	**Review of Approved Alternate Means of Control Plans and Termination of Alternate Means of Control Plans**	
§115.916(a)	For the purposes of this division (relating to Alternate Means of Control), "compliance date" shall mean the date by which a source must comply with new or modified sections of this chapter.	
§115.916(b)	Unless revised to reflect new regulatory requirements, an alternative means of control (AMOC) plan becomes void on the compliance date specified for a new or modified section of this chapter affecting a source subject to an AMOC plan.	
§115.916(c)	The holder of an AMOC plan shall comply with the requirements of this chapter if the AMOC plan is voided	
§115.916(d)	Upon final approval of an AMOC plan, the owner or operator of the facilities affected by such plan shall keep a copy of the plan on the site affected by the plan and shall make the plan available upon request to representatives of the executive director, EPA, or any local program	
§115.916(e)	Upon request, each holder of an AMOC plan shall submit to the executive director a demonstration that the plan continues to meet all applicable criteria of this division	
§115.916(f)	An AMOC holder is responsible for obtaining a new AMOC plan prior to the compliance date of any new or modified regulation of this chapter that affects a source subject to an AMOC plan	

Attachment C
Federal Rule Applicability for Flare Control

Citation	Description	Review
	40 CFR 60, Subpart Kb, Standards of Performance for VOC Storage Vessels (NSPS Kb)	
	Issued 7/23/1984, Amended 1/19/2021, proposed Amendments 10/4/2023 Volatile Organic Liquid Storage Vessels - Including Petroleum Storage Vessels: New Source Performance Standards (NSPS) | US EPA	
	NSPS subpart Kb applies to VOL storage vessels that commence construction, reconstruction, or modification after July 23, 1984 and on or before October 4, 2023.	
§60.112b	**Standard for VOC**	
§60.112b(a)	The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:	*The company identified that the liquid condensate tanks will use a closed vent system and control device (i.e., Ground Flare) to comply with NSPS Kb if constructed prior to 10/4/2023.*
§60.112b(a)(3)	A closed vent system and control device meeting the following	
§60.112b(a)(3)(ii)	The control device shall be designed and operated to reduce inlet VOC emissions by 95% or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements §60.18 of the General Provisions.	*This AMOC shall ensure the MPGF will achieve > 95% DRE and meet the updated requirements for flares following MACT rules, Framework, NSPS Kb and proposed NSPS Kc.*
§60.113b	**Testing and Procedures**	
§60.113b(d)	The o/o of each source that is equipped with a closed vent system and a flare to meet the general control device requirements §60.18(e) and (f).	*This AMOC will review equivalent requirements.*
§60.114b	**Alternative means of emission limitation**	
§60.114b(a)	If, in the Administrator's judgement, an alternative means of emission limitation will achieve a reduction in emissions at least as equivalent to the reduction in emissions achieved by any requirement in §60.112b, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement.	*The AMEL process is not delegated to any state authority. Reviews are done by EPA HQ (OAQPS). At the date of this review, no AMEL is needed as all potentially applicable federal rules include, or soon will include, MPGF requirements.*
§60.114b(b)	Any notice under (a) will be published only after notice and an opportunity for a hearing.	
§60.114b(c)	Any person seeking permission under this section shall submit to the Administrator a written application including:	
§60.114b(c)(2)	An engineering evaluation that the Administrator determines is an accurate method of determining equivalency	*See EPA's MPGF Framework and recent MACT & NSPS rules.*
§60.114b(d)	The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in §60.112b.	*Conditions and requirements proposed consistent with federal rules.*
PROPOSED Kc	**Subpart Kc — Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023**	
	EPA is "proposing to revise the volatile organic compound (VOC) standards to reflect the best system of emissions reductions (BSER) for affected storage vessels. We are also proposing additional monitoring and operating requirements to ensure continuous compliance with the standard. In addition, the EPA is proposing degassing emission controls; clarification of startup, shutdown, and malfunction requirements".	
§60.110b(a)	each storage vessel with a capacity greater than or equal to 20,000 gallons (gal) (75.7 cubic meters (m^3)) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after 10/4/2023	*The company indicated that most/all tanks are not constructed and will be applicable to the new NSPS Kc requirements.*
§60.110b(g)	All standards including emission limitations shall apply at all times, including periods of startup, shutdown and malfunction. As provided in § 60.11(f), this provision supersedes the exemptions for periods of startup, shutdown and malfunction in subpart A of this part.	*The new NSPS standards apply at all times, including MSS and upsets. EPA refers to this as SSM.*
§60.112c	**Standard for VOC**	
§60.112c(a)(2)	For each storage vessel affected facility containing a VOL that, as stored, has a maximum true vapor pressure of 11.1 psia (76.6 kPa) or more, you must install and operate a closed vent system routed to a control, fuel gas system, or process	*The condensate tanks would be applicable to these flare requirements.*
§60.112c(d)	Requirements for closed vent systems routed to a control device, fuel gas system, or process.	*The tanks must be routed in a closed vent system (with associated required LDAR in the new NSPS).*
§60.112c(d)(5)	If you route from a storage vessel to a flare, you must meet all applicable requirements specified in **§ 63.670(b) through (g) and (i) through (n)** of this chapter except as provided in paragraphs (d)(5)(i) through (v) of this section.	*The flare requirements are listed in MACT CC and include MPGF-specific rules (see below) and will establish ≥ 98% DRE control – see below for details.*
§60.112c(e)	Requirements for storage vessel degassing.	*SSM activities must be controlled by*

§60.112c(e)(2)(i)	Reduce total VOC emissions by venting emissions through a closed vent system to a flare operated according to the requirements in paragraph (d)(5) of this section	*a flare meeting the new*
§60.113c(c)	Testing, Monitoring, and Inspections	
§60.113c(c)	Requirements for closed vent systems routed to a control device, fuel gas system or process. For each source that is equipped with a closed vent system and routes to a control device, fuel gas system or process to meet the requirements in §60.112c(d), you must conduct performance testing and monitoring of the control device as specified in paragraph (c)(1) of this section, conduct monitoring and inspections of the closed vent system as specified in paragraph (c)(2) of this section, repair leaks as specified in paragraph (c)(3) of this section, and develop a monitoring plan as specified in paragraph (c)(4) of this section.	*The applicant represents they will comply with all closed vent capture requirements. Details are not included in the MPGF AMOC Plan.*
§60.113c(c)(1)	For each control device used to meet the requirements in in § 60.112c(d), you must comply with the requirements in paragraphs (c)(1)(i) through (iv) of this section, as applicable	
§60.113c(c)(1)(i)	For each enclosed combustion device or flare, you must install, calibrate, maintain, and operate a backpressure regulator valve calibrated to open at the minimum pressure set point corresponding to the minimum inlet gas flow rate. The set point must be consistent with manufacturer specifications for minimum flow or pressure and must be supported by an engineering evaluation. At least annually, you must confirm that the backpressure regulator valve set point is correct and consistent with the engineering evaluation and manufacturer specifications and that the valve fully closes when not in the open position.	*The staging valves for MPGF operate as the pressure regulators for the control system and include minimum set points as represented in the flare staging curves (see file and initial AMOC Technical Summary).*
§60.113c(c)(1)(iv)	For each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112c(d), you must conduct visible emission observations as specified in paragraph (c)(1)(iv)(A) of this section and install, operate, and maintain CMS for flares following the requirements specified in § 63.671 of this chapter and as specified in paragraphs (c)(1)(iv)(B) and (C) of this section	

40 CFR 60, Subpart NNN, Standard of Performance for VOC Distillation Operations (NSPS NNN)

§60.662	**Standards**	
	Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §§ 60.8 and 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:	*The process vents from the Demethanizer and Debutanizer Columns are subject to the standards of NSPS NNN as permitted. "The process vents are equipped with PSVs that are normally closed, but when they relieve the process vents are routed to the Ground Flare for control."*
§60.662(b)	Combust the emissions in a flare that meets the requirements of § 60.18;	
§60.663	**Monitoring of emissions and operations**	
§60.663(b)	The owner or operator of an affected facility that uses a flare to seek to comply with § 60.662(b) shall install, calibrate, maintain and operate according to manufacturer's specifications the following equipment:	*The PSV releases are sent to the MPGF which is required to have a pilot and flow monitoring system.*
§60.663(b)(1)	A heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.	
§60.663(b)(2)	A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.	
§60.664	**Test Methods and Procedures**	
§60.664(d)	When a flare is used to seek to comply with § 60.662(b), the flare shall comply with the requirements of § 60.18.	*This AMOC shall ensure the MPGF will meet the updated requirements for flares following MACT rules and Framework. EPA notes in an NSPS preamble that following the requirements in § 60.18 are equivalent to 95% DRE.*

Subpart NNNa—Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations for Which Construction, Reconstruction, or Modification Commenced After 4/6/2023

§60.662a(b)	The following release events from an affected facility are a violation of the emission limits and standards specified in Table 1 to this subpart.	*The company indicated that the process equipment may not yet be constructed and may be applicable to the*

		new NSPS Kc requirements.
§60.662a(b)(2)	The use of a bypass line at any time on a closed vent system to divert emissions to the atmosphere, or to a control device or recovery device not meeting the requirements specified in §60.663a.	*The releases must be captured at all times and vented to control.*
§60.669a	***Flare Requirements***	
§60.669a(a)	If you use a flare to comply with the TOC emission standard specified in Table 1 to this subpart, then you must **meet the applicable requirements for flares as specified in §§63.670 and 63.671 of part 63, subpart CC of this chapter, including the provisions in Tables 12 and 13 to part 63, subpart CC of this chapter**, except as specified in paragraphs (b) through (o) of this section. For purposes of compliance with this paragraph (a), the following terms are defined in §63.641 of part 63, subpart CC of this chapter: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam.	*The flare requirements are listed in MACT CC and include MPGF-specific rules (see below) and will establish 98% DRE control.*
§60.669a(c)	When determining compliance with the flare tip velocity and combustion zone operating limits specified in §63.670(d) and (e) of part 63, subpart CC of this chapter, the requirement effectively applies starting with the 15-minute block that includes a full 15 minutes of the flaring event. You are required to demonstrate compliance with the velocity and NHVcz requirements starting with the block that contains the fifteenth minute of a flaring event. You are not required to demonstrate compliance for the previous 15-minute block in which the event started and contained only a fraction of flow.	*See below for details.*
§60.669a(i)	If a pressure-assisted multi-point flare is used as a control device, then you must meet the following conditions:	*The proposed rules include requirements for MPGF and establishes a 98% DRE with no maximum tip velocity and a minimum of 800 MMBtu/scf NHV.*
§60.669a(i)(1)	You are not required to comply with the flare tip velocity requirements in paragraph (d) and (k) of §63.670 of part 63, subpart CC of this chapter;	
§60.669a(i)(2)	You must substitute “800” for each occurrence of “270” in paragraph (e) of §63.670 of part 63, subpart CC of this chapter;	
§60.669a(i)(3)	You must determine the 15-minute block average NHVvg using only the direct calculation method specified in in paragraph (l)(5)(ii) of §63.670	*This rule will be referenced in the AMOC Conditions.*
§60.669a(i)(4)	Instead of complying with paragraph (b) and (g) of §63.670 of part 63, subpart CC of this chapter, if a pressure-assisted multi-point flare uses cross-lighting on a stage of burners rather than having an individual pilot flame on each burner, then you must operate each stage of the pressure-assisted multi-point flare with a flame present at all times when regulated material is routed to that stage of burners. Each stage of burners that cross-lights in the pressure-assisted multi-point flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. Each 15-minute block during which there is at least one minute where no pilot flame is present on a stage of burners when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The pilot flame(s) on each stage of burners that use cross-lighting must be continuously monitored by a thermocouple or any other equivalent device used to detect the presence of a flame;	*Each stage of burners that cross-lights in the pressure-assisted multi-point flare will have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners*
§60.669a(i)(5)	Unless you choose to conduct a cross-light performance demonstration as specified in this paragraph (i)(5), you must ensure that if a stage of burners on the flare uses cross-lighting, that the distance between any two burners in series on that stage is no more than 6 feet when measured from the center of one burner to the next burner. A distance greater than 6 feet between any two burners in series may be used provided you conduct a performance demonstration that confirms the pressure-assisted multi-point flare will cross-light a minimum of three burners and the spacing between the burners and location of the pilot flame must be representative of the projected installation. The **compliance demonstration must be approved by the permitting authority** and a copy of this approval must be maintained onsite. The compliance demonstration report must include: a protocol describing the test methodology used, associated test method QA/QC parameters, the waste gas composition and NHVcz of the gas tested, the velocity of the waste gas tested, the pressure-assisted multi-point flare burner tip pressure, the time, length, and duration of the test, records of whether a successful cross-light was observed over all of the burners and the length of time it took for the burners to cross-light, records of maintaining a stable flame after a successful cross-light and the duration for which this was observed, records of any smoking events during the cross-light, waste gas temperature, meteorological conditions (e.g., ambient temperature, barometric pressure, wind speed and direction, and relative humidity), and whether there were any observed flare flameouts; and	*The company is proposing to conduct a cross-light performance demonstration for the LRGO burners. For these burners, the manufacturer has indicated the spacing is/is not more than 6 feet, but the manufacturer has chosen to complete the cross-lighting testing.* *For the Indair burners, these stage 1 burners are used in both MPGF (Wet and Dry) and include a dedicated pilot per burner which remain lit at all times, therefore cross-lighting requirements are not applicable.*
§60.669a(i)(6)	You must install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in Table 13 to part 63, subpart CC of this chapter.	*The main flare header has pressure monitoring to ensure proper staging controls of the systems.*
§60.669a(i)(7)	If a pressure-assisted multi-point flare is operating under the requirements of an approved alternative means of emission limitations, you must either continue to comply with the terms of the alternative means of emission limitations or comply with the provisions in paragraphs (i)(1) through (i)(6) of this section.	*N/A*

40 CFR 63 , Subpart EEEE, National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) (MACT EEEE)

Last amended 8/12/2020, effective 8/12/2023

§63.2346	**Emission limitations, Operating limits, and Work practice standards**	
§63.2346(a)	Storage tanks.	*The liquid condensate tanks and condensate truck loading will be applicable to this federal standard.*
§63.2346(a)(1)	Meet the emission limits specified in Table 2 or 2b, comply with paragraph (l) and MACT SS	*To meet the emission standards, the tanks and loading are controlled by the flare systems.*
§63.2346(b)	Transfer racks….Table 2	
§63.2346(k)	***Flares.*** Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack that is subject to control based on the criteria specified in Tables 2 or 2b to this subpart, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2380 instead of the requirements in § 63.987 and the provisions regarding flare compliance assessments at § 63.997(a), (b), and (c).	
§63.2346(l)	***Startup, shutdown, and malfunction.*** Beginning no later than the compliance dates specified	*The tanks and loading must be controlled at all times.*
§63.2350	General Requirements	
§63.2350(a)	You must be in compliance with the emission limitations, operating limits, and work practice standards in this subpart at all times	
§63.2354	**Performance Tests, design evaluations, performance evaluations**	
§63.2354(b)(6)(i)	you must conduct performance tests under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested.	*Performance testing is following EPA's guidance and rules for pressure-assisted MPGF.*
§63.2380	**Flare Requirements**	
§63.2380(a)	Beginning no later than the compliance dates specified in § 63.2342(e), if you reduce organic HAP emissions by venting emissions through a closed vent system to a steam-assisted, air-assisted, or non-assisted flare to control emissions from a storage tank, low throughput transfer rack, or high throughput transfer rack that is subject to control based on the criteria specified in Tables 2 or 2b to this subpart, .. **you must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671, including the provisions in Tables 12 and 13 to subpart CC of this part**, except as specified in paragraphs (b) through (m) of this section. For purposes of compliance with this paragraph, the following terms are defined in § 63.641: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam.	*This flare review details compliance with 63.670-671 – see below.*
§63.641	Flare means a combustion device lacking an enclosed combustion chamber that uses an uncontrolled volume of ambient air to burn gases. For the purposes of this rule, the definition of flare includes, but is not necessarily limited to, pressure-assisted flares, air-assisted flares, steam-assisted flares, and non-assisted flares.	*EPA has added high-pressure MPGF to these rules as of 4/4/2024.*
§63.670(b)	Pilot flame presence. The owner or operator shall operate each flare with a pilot flame present on an individual burner or stage of burners at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame on an individual burner or stage of burners is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The owner or operator shall monitor for the presence of a pilot flame on an individual burner or stage of burners as specified in paragraph (g) of this section. Pressure-assisted flares using stages of burner that cross-light must also comply with (b)(1) and (2) of this section.	*The federal rules are updated to account for the unique design and operations of MPGF after EPA's review of dozens of these flares since 2015.*
§63.670(b)(1)	Each stage of burners that cross-lights in the pressure-assisted flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners.	*MPGF stages must have at least 2 pilots, which is represented for the LRGO stages. This requirement is not applicable to the Indair flare tips since each burner has its own pilot.*
§63.670(b)(2)	Unless the owner or operator of a pressure-assisted flare chooses to conduct a cross-light performance demonstration as specified in this paragraph, the owner or operator must ensure that if a stage of burners on the flare uses cross-lighting, that the distance between any two burners in series on that stage is no more than 6 feet when measured from the center of one burner to the next burner. A distance greater than 6 feet between any two burners in series may be used provided the owner or operator complies with the requirements in paragraphs (b)(2)(i) through (iii) of this section.	*The LRGO flare tips will perform a demonstration of cross-lighting during the most challenging of expected design or operating conditions.*
§63.670(b)(2)(i)	You must conduct a performance demonstration that confirms the pressure-assisted flare will cross-light a minimum of three burners and the spacing between the burners and location of the pilot flame must be representative of the projected installation.	*See below for details.*
§63.670(b)(2)(ii)	The compliance demonstration must be approved by the permitting authority and a	*See below for details.*

	copy of this approval must be maintained onsite.	
§63.670(b)(2)(iii)	The compliance demonstration report must include the information in paragraphs (b)(2)(iii)(A) through (K) of this section:	*The testing report (and provided test reports from other flare testing) includes:*
§63.670(b)(2)(iii)(A)	A protocol describing the test methodology used, associated test method QA/QC parameters.	*The test methodologies, TM and QA/QC are available in the file or other publicly available documents for previously conducted tests.*
§63.670(b)(2)(iii)(B)	The waste gas composition and NHVcz of the gas tested.	*The gas composition and NHVcz of the tested gas is in the report or other publicly available documents for previously conducted tests.*
§63.670(b)(2)(iii)(C)	The velocity of the waste gas tested.	*The gas velocity of the tested gas is in the reports (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(D)	The pressure-assisted multi-point flare burner tip pressure.	*The flare tip pressure is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(E)	The time, length, and duration of the test.	*The test run details is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(F)	Records of whether a successful cross-light was observed over all of the burners and the length of time it took for the burners to cross-light.	*The cross-light test observations is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(G)	Records of maintaining a stable flame after a successful cross-light and the duration for which this was observed.	*The flame stability as a result of the cross-lighting is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(H)	Records of any smoking events during the cross-light.	*Any observed smoking as a result of the cross-lighting is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(I)	Waste gas temperature	*The gas temperature is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(J)	Meteorological conditions (e.g., ambient temperature, barometric pressure, wind speed and direction, and relative humidity) during the demonstration.	*Meteorological conditions is in the report (or other publicly available documents for previously conducted tests).*
§63.670(b)(2)(iii)(K)	An indication whether there were any observed flare flameouts and if so, the number and duration of each flare flameout.	*Any observed flameouts is in the report (or other publicly available documents for previously conducted tests).*
§63.670(d)	Flare tip velocity. Except as provided in paragraph (d)(3) of this section for pressure-assisted flares, for each flare, the owner or operator shall comply with either paragraph (d)(1) or (2) of this section, provided the appropriate monitoring systems are in-place, whenever regulated material is routed to the flare for at least 15-minutes and the flare vent gas flow rate is less than the smokeless design capacity of the flare	*The federal rules have been updated to account for the unique design and operations of MPGF after EPA's review of dozens of these flares since 2015.*
§63.670(d)(3)	Pressure-assisted flares are not subject to the flare tip velocity limits in either paragraph (d)(1) or (2) of this section. In lieu of the flare tip velocity limits, the owner or operator of a pressure-assisted flare must install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in Table 13 of this subpart.	*MPGF do not comply with flare tip requirements because of the nature of the minimum required flow rate (> Mach 1 speeds).*
§63.670(e)	Combustion zone operating limits. The owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above the	*The federal rules account for the unique design and*

	applicable limits in paragraphs (e)(1) and (2) of this section determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVcz as specified in paragraph (m) of this section.	*operations of MPGF and standard flares.*
§63.670(e)(1)	For all flares other than pressure-assisted flares, 270 British thermal units per standard cubic feet (Btu/scf)	*These requirements are applicable to a MPGF controlling an applicable unit. The Wet and Dry Flare in this project was tested (or have provided previous tests) based on a minimum of 800 Btu/scf.*
§63.670(e)(2)	For each pressure-assisted flare, 800 Btu/scf.	
§ 63.670(f)	Dilution operating limits for flares with perimeter assist air. For each flare actively receiving perimeter assist air, the owner or operator shall operate the flare to maintain the net heating value dilution parameter (NHV_{dil}) at or above 22 British thermal units per square foot (Btu/ft^2) determined on a 15-minute block period basis when regulated material is being routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHV_{dil} as specified in paragraph (N).	*N/A*
§ 63.670(g)	Pilot flame monitoring**.** The owner or operator shall continuously monitor the presence of the pilot flame(s) using a device (including, but not limited to, a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of detecting that the pilot flame(s) is present.	*The pilots for the Indair and LRGO flares will be lit at all times and monitored appropriately.*
§ 63.670(h)	Visible emissions monitoring. The owner or operator shall monitor visible emissions while regulated materials are vented to the flare. An initial visible emissions demonstration must be conducted using an observation period of 2 hours using Method 22 at 40 CFR part 60, appendix A-7. Subsequent visible emissions observations must be conducted using either the methods in (1) or (2) below. The owner or operator must record and report any instances where visible emissions are observed for more than 5 minutes during any 2 consecutive hours.	*The required visible emission monitoring will be referenced in the AMOC Plan conditions.*
§ 63.670(i)	Flare vent gas, steam assist and air assist flow rate monitoring**.** The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare header or headers that feed the flare as well as any supplemental natural gas used. Different flow monitoring methods may be used to measure different gaseous streams that make up the flare vent gas provided that the flow rates of all gas streams that contribute to the flare vent gas are determined. If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. If pre-mix assist air and perimeter assist are both used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.	*The required flow monitoring will be referenced in the AMOC Plan conditions.*
§ 63.670(l)	Calculation methods for determining flare vent gas net heating value. The owner or operator shall determine the net heating value of the flare vent gas (NHV_{vg}) based on the composition monitoring data on a 15-minute block average basis according to the following requirements.	*The required NHV quantification and associated monitoring will be referenced in the AMOC Plan conditions.*
§63.670(l)(5)	When a continuous monitoring system is used as provided in paragraph (j)(1) or (3) of this section and, if applicable, paragraph (j)(4) of this section, the owner or operator of a flare other than a pressure-assisted flare may elect to determine the 15-minute block average NHVvg using either the calculation methods in paragraph (l)(5)(i) of this section or the calculation methods in paragraph (l)(5)(ii) of this section. The owner or operator may choose to comply using the calculation methods in paragraph (l)(5)(i) of this section for some non-pressure-assisted flares at the petroleum refinery and comply using the calculation methods (l)(5)(ii) of this section for other flares. However, for each non-pressure-assisted flare, the owner or operator must elect one calculation method that will apply at all times and use that method for all continuously monitored flare vent streams associated with that flare. If the owner or operator intends to change the calculation method that applies to a flare, the owner or operator must notify the Administrator 30 days in advance of such a change. For pressure-assisted flares, the owner or operator must use the calculation method in paragraph (l)(5)(ii) of this section.	*The Wet and Dry MPGF compliance demonstrations will use the specified direct calculation method.*
§63.670(l)(5)(ii)	Direct calculation method. When calculating NHVvg for a specific 15-minute block	
§63.655(g)(11)(iii)	reporting and recordkeeping requirements specific to pressure-assisted flares	
§63.655(i)(9)(vi)	add mass spectrometry as a method…add specific requirements for calibration and operation of mass spectrometers that parallel the requirements for gas chromatographs	
§ 63.670(m)	Calculation methods for determining combustion zone net heating value. The owner or operator shall determine the net heating value of the combustion zone gas (NHV_{cz}) as specified in paragraph (M)(1) or (2), as applicable.	*The AMOC Plan will refer to these calculation methods for NHV.*
§ 63.670(n)	Calculation methods for determining the net heating value dilution parameter. The owner or operator shall determine the net heating value dilution parameter (NHV_{dil}) as specified in paragraph (N)(1) or (2), as applicable.	

§63.2380(i)	You may elect to comply with the alternative means of emissions limitation requirements specified in § 63.670(r)in lieu of the requirements in § 63.670(d) through (f), as applicable. However, instead of complying with § 63.670(r)(3)(iii), you must also submit the alternative means of emissions limitation request to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143–01), Attention: Organic Liquids Distribution Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to *oldrtr@epa.gov*.	*If a flare does not meet the specific regulatory requirements, an AMEL must be submitted. This is not applicable in this project.*
§63.2380(j)	If you choose to determine compositional analysis for net heating value with a continuous process mass spectrometer, then you must comply with the requirements specified in paragraphs (j)(1) through (7) of this section.	*If applicable, these monitoring methods will be followed.*
§63.2380(k)	If you use a gas chromatograph or mass spectrometer for compositional analysis for net heating value, then…	

Attachment D
Draft AMOC Plan Conditions

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Alternative Method of Control (AMOC) Plan, AMOC No.: AMOC-231
Port Arthur LNG, LLC
Natural Gas Liquefaction Plant and Export Terminal Multi-Point Ground Flare (MPGF) System
Port Arthur, Jefferson County
Regulated Entity Number: RN104517826

1. This AMOC Plan Authorization shall apply at the Port Arthur LNG, LLC (PALNG) liquified natural gas (LNG) liquefaction plant and export terminal located near Port Arthur, Jefferson County identified by Regulated Entity Number RN104517826**.** Under Title 30 Texas Administrative Code (TAC) Section 115.910 (§ 115.910) this plan authorizes the pressure-assisted stages of the Wet and Dry multi-point ground flares (MPGF) for use to control emissions from liquid condensate tanks, demethanizer and debutanizer process vents; liquid condensate tanks; and condensate truck loading during routine operations, planned maintenance, start-ups and shut-downs (MSS), as well as unauthorized, unplanned emergency and upset situations.

2. A copy of the AMOC application and the AMOC Plan provisions must be kept on-site or at a centralized location and made available at the request of personnel from the TCEQ or any pollution control agency with jurisdiction. This AMOC authorization is defined by the application received November 7, 2023 and supporting documentation submitted through [date PN verified].

3. This authorization is granted under § 115.910 for emissions sources regulated by 30 TAC Chapter 115:

   - Subchapter B: General Volatile Organic Compound Sources, Division 1 Storage of VOCs;
   - Subchapter B: General Volatile Organic Compound Sources, Division 2 Vent Gas Control; and
   - Subchapter C: Volatile Organic Compound Transfer Operations, Division 1 Loading and Unloading of VOCs.

   This AMOC shall apply in lieu of the requirements in these state regulations, as applicable. Compliance with this AMOC is independent of the regulated entity's obligation to comply with all other applicable requirements of 30 TAC Chapter 115, TCEQ permits and applicable state and federal law. Compliance with the requirements of this plan does not assure compliance with requirements of an applicable New Source Performance Standard, National Emission Standard for Hazardous Air Pollutants, or an Alternative Means of Emission Limitation (AMEL) and does not constitute approval of alternative standards for these regulations.

4. In accordance with 30 TAC § 115.913(c), all representations submitted for this plan, as well as the provisions listed here, become conditions upon which this AMOC Plan is issued. It is unlawful to vary from the emission limits, control requirements, monitoring, testing, reporting or recordkeeping requirements of this Plan.

   The TCEQ Region may request a performance test if the MPGF systems cannot comply with the requirements of this Plan.

5. The high-pressure MPGF systems are identified as "Ground Flare" (EPN G-FLARE) and are authorized under Permit Nos. 131769, PSDTX1456, GHGPSDTX134 and 158420, PSDTX1572, GHGPSD198 and are subject to this AMOC Plan. When the pressure-assisted burners are operated, compliance is demonstrated following the requirements in paragraph 6 of this AMOC Plan.

6. The Wet and Dry MPGF systems are manufactured by John Zink Hamworthy Combustion (JZHC). The Wet Flare consists of three (3) Indair burners on Stage 1 and a total of 131 LRGO burners on Stages 2 – 5. The Dry Flare includes three (3) Indair burners on Stage 1 and a total of 417 LRGO burners in Stages 2 –9.

The MPGF operates with no assist air or assist steam and shall operate in accordance with the following requirements when regulated materials are routed to the flare systems to achieve 99% VOC destruction/removal efficiency (DRE).

A. Operating Requirements: The net heating value of the flare vent gas (NHV_{vg}) must greater than or equal to 800 British thermal units per standard cubic foot (800 Btu/scf) demonstrated by continuously complying based on a 15-minute block average in accordance with 40 CFR § 63.670(e)(2).

(1) Flare vent gas composition NHV_{vg}. Determine the concentration of individual components or the net heating value in the flare vent gas using the methods in 40 CFR §§ 63.670(j), 63.670(l), and Table 12 of MACT CC, as applicable. Different monitoring methods may be used to determine vent gas composition for different gaseous streams provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined.

(2) Maximum Flare Tip Velocity (V_{tip}). Calculation of or limits on V_{tip} is not applicable to the HP MPGF burners consistent with 40 CFR § 63.670(d)(3).

(3) Flare Vent Gas Flow Rate Requirements**.** Install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the cumulative volumetric flow rates in the flare header or headers that feed the flares, and any supplemental fuel used with the flare. The flow rate monitoring systems must comply with 40 CFR § 63.670(i), as applicable.

B. Pilot Flame Requirements: All Indair burners shall be equipped with individual pilots. Each stage of LRGO burners that cross-lights in the pressure-assisted MPGFs must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. The MPGF systems shall be operated with a flame present at all times when regulated material is routed to a given stage of high-pressure burners and meet 40 CFR § 63.670(b).

C. Visible Emission Requirements: When any HP flare stage is receiving regulated materials, the MPGF shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours and meet 40 CFR § 63.670(c) and (h).

D. Stage Valve Position Indicator and Pressure Monitor Requirements: Install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer and in accordance with 40 CFR § 63.670(d)(3).

E. Closed Vent Capture Systems. Streams vented to the MPGF must be routed through a closed vent system that is not open to the atmosphere and is configured of piping, ductwork, connections, and flow inducing devices that transport gas or vapor from any emission source or point to a control device.

F. Continuous Monitoring Requirements: Follow the specifications, calibration, and maintenance procedures according to the following:

(1) General.

(a) At all times, all monitoring equipment must operate and be maintained in a manner consistent with 40 CFR §§ 60.11(d), 63.6(e)(1)(i), 63.671(a), and Table 13 of MACT CC with the TCEQ as the Administrator.

(b) Any monitor downtime must comply with 40 CFR §§ 63.671(a)(4) and 63.671(c). The monitors and analyzers shall operate as required at least 95% of the time when any stage of the MPGF is operational, averaged over a rolling 12-month period.

(c) Unless otherwise specified, for each measurement produced by the monitoring systems shall comply with 40 CFR §63.671(d).

(2) Composition or Net Heating Values. Install, operate, calibrate, and maintain a monitoring system specified in (a) and may elect to supplement the monitoring as specified in (b) or (c).

a. A calorimeter capable of continuously measuring, calculating, and recording the net heating value, NHVvg, present in the flare vent gas according to 40 CFR § 63.670(j)(3). The monitor shall meet the accuracy and calibration requirements of Table 13 of MACT CC.

b. A gas chromatograph or gas chromatograph / mass spectrograph system may be used to determine NHVvg as specified in 40 CFR § 63.670(j)(1) or (2). Component properties determinations must follow 40 CFR § 63.670(l)(1) and Table 12 of MACT CC. The system used to determine compositional analysis shall follow 40 CFR § 63.671(e).

.

c. An optional hydrogen monitoring system may be used if capable of meeting 40 CFR § 63.670(j)(4). The hydrogen analyzer must meet accuracy and calibration requirements of Table 13, MACT CC.

(3) Flow Rates.

a. Different flow monitoring methods may be used to measure different gaseous streams and assist media streams provided that 40 CFR §63.670(i) is followed.

b. The measurement location must be selected following Table 13 of MACT CC.

c. All flow monitors shall meet the accuracy and calibration requirements of Table 13 of MACT CC.

(4) Pilots.

a. The pilot flame continuous monitoring must meet 40 CFR § 63.670(b).

b. Loss of pilot flame is determined by and must meet 40 CFR §§63.670(b) and records must follow 40 CFR § 63.655(i)(9)(i).

c. A video camera that meets 40 CFR §63.670(h)(2) may be used to demonstrate compliance.

(5) Pressure. Any pressure monitor must meet the accuracy and calibration requirements of Table 13 of MACT CC.

(6) Temperature. Any temperature monitor must meet the accuracy and calibration requirements of Table 13 of MACT CC.

G. Recordkeeping Requirements

Records shall follow requirements in 40 CFR § 63.655(i).

H. Emission Determinations.

Calculations of hourly and annual emissions to determine compliance with the MAERT limitations shall be determined and recorded using the monitoring data collected pursuant to this AMOC Plan applying the best data of the parameters measured during each 15-minute block period and the appropriate emission factors based on the approach represented in the Permits. Annual emissions shall be calculated by the end of the current month for the previous rolling 12-month period. To calculate CH_4 and CO_2 emissions, use the methodology in 40 CFR § 98.233(n)(4) – (6).