

FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO

Air Liquide Large Industries U.S. LP
AUTHORIZING THE OPERATION OF
Freeport HyCO Plant
Industrial Gases
LOCATED AT

Brazoria County, Texas

Latitude 28° 58' 52" Longitude 95° 23' 7"

Regulated Entity Number: RN100215334

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

Due to the poor compliance history rating, this permit shall expire four years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: O2391 Issuance Date: _____

For the Commission

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General Terms and Conditions

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

Special Terms and Conditions: Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting

1. Permit holder shall comply with the following requirements:
 - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
 - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.

- C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.
- D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.
- E. For the purpose of generating emission reduction credits through 30 TAC Chapter 101, Subchapter H, Division 1 (Emission Credit Banking and Trading), the permit holder shall comply with the following requirements:
 - (i) Title 30 TAC § 101.302 (relating to General Provisions)
 - (ii) Title 30 TAC § 101.303 (relating to Emission Reduction Credit Generation Certification)
 - (iii) Title 30 TAC § 101.304 (relating to Mobile Emission Reduction Credit Generation and Certification)
 - (iv) Title 30 TAC § 101.309 (relating to Emission Credit Banking and Trading)
 - (v) The terms and conditions by which the emission limits are established to generate the reduction credit are applicable requirements of this permit
- F. The permit holder shall comply with the following 30 TAC Chapter 101, Subchapter H, Division 3 (Mass Emission Cap and Trade Program) Requirements:
 - (i) Title 30 TAC § 101.352 (relating to General Provisions)
 - (ii) Title 30 TAC § 101.353 (relating to Allocation of Allowances)
 - (iii) Title 30 TAC § 101.354 (relating to Allowance Deductions)
 - (iv) Title 30 TAC § 101.356 (relating to Allowance Banking and Trading)
 - (v) Title 30 TAC § 101.358 (relating to Emission Monitoring and Compliance Demonstration)
 - (vi) Title 30 TAC § 101.359 (relating to Reporting)

- (vii) Title 30 TAC § 101.360 (relating to Level of Activity Certification)
 - (viii) The terms and conditions by which the emission limits are established to meet or exceed the cap are applicable requirements of this permit
2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
- A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
 - B. Title 30 TAC § 101.3 (relating to Circumvention)
 - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
 - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
 - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
 - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
 - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
 - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
 - I. Title 30 TAC § 101.222 (relating to Demonstrations)
 - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
- A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:
 - (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)

- (ii) Title 30 TAC § 111.111(a)(1)(E)
- (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
- (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the “Applicable Requirements Summary” attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:
 - (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
 - (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
 - (3) Records of all observations shall be maintained.
 - (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with

each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(5) Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
- (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

- B. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).
- C. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
 - (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
 - (ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)
 - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- 4. The permit holder shall comply with the following 30 TAC Chapter 115, Subchapter F requirements (relating to Cutback Asphalt Requirements):
 - A. Title 30 TAC § 115.512(3) (relating to Control Requirements)
- 5. The permit holder shall comply with the requirements of 30 TAC § 115.726(e)(1) for a site claiming exemption under 30 TAC § 115.727(a).
- 6. The permit holder shall comply with the following requirements of 30 TAC Chapter 115, Subchapter H, Division 1 for pressure relief devices not controlled by a flare:
 - A. Title 30 TAC § 115.725(c)
 - B. Title 30 TAC § 115.725(c)(1), (c)(1)(A) - (C)
 - C. Title 30 TAC § 115.725(c)(2)
 - D. Title 30 TAC § 115.725(c)(3), (c)(3)(A) - (E)
 - E. Title 30 TAC § 115.725(c)(4)
 - F. Title 30 TAC § 115.725(l)
 - G. Title 30 TAC § 115.726(c), (c)(1) - (4)
- 7. The permit holder shall comply with the requirements of 30 TAC § 115.726(e)(3)(A) for vent streams having no potential to emit HRVOC.

8. The permit holder shall comply with the requirements of 30 TAC § 115.726(e)(3)(A) for vent streams from sources exempt under 30 TAC § 115.727(c)(3).
9. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:
 - A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
 - B. Title 40 CFR § 60.8 (relating to Performance Tests)
 - C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
 - D. Title 40 CFR § 60.12 (relating to Circumvention)
 - E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
 - F. Title 40 CFR § 60.14 (relating to Modification)
 - G. Title 40 CFR § 60.15 (relating to Reconstruction)
 - H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)

Additional Monitoring Requirements

10. The permit holder shall comply with the periodic monitoring requirements as specified in the attached “Periodic Monitoring Summary” upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time specified in the “Periodic Monitoring Summary,” for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

New Source Review Authorization Requirements

11. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction

Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:

- A. Are incorporated by reference into this permit as applicable requirements
 - B. Shall be located with this operating permit
 - C. Are not eligible for a permit shield
12. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
13. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, material safety data sheets (MSDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

Compliance Requirements

14. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
15. Permit holder shall comply with the following 30 TAC Chapter 117 requirements:
- A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:
 - (i) For sources in the Houston-Galveston-Brazoria Nonattainment area, 30 TAC § 117.9020:

- (1) Title 30 TAC § 117.9020(2)(A), (C), and (D)
 - B. The permit holder shall comply with the requirements of 30 TAC § 117.354 for Final Control Plan Procedures for Attainment Demonstration Emission Specifications and 30 TAC § 117.356 for Revision of Final Control Plan.
16. Use of Emission Credits to comply with applicable requirements:
- A. Unless otherwise prohibited, the permit holder may use emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) Offsets for Title 30 TAC Chapter 116
 - B. The permit holder shall comply with the following requirements in order to use the emission credits to comply with the applicable requirements:
 - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.306(c)(2)
 - (ii) The emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 1
 - (iii) The executive director has approved the use of the credit according to 30 TAC § 101.306(c)(2)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.302(g) and 30 TAC Chapter 122
 - (v) Title 30 TAC § 101.305 (relating to Emission Reductions Achieved Outside the United States)
17. Use of Discrete Emission Credits to comply with the applicable requirements:
- A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) If applicable, offsets for Title 30 TAC Chapter 116

- (iv) Temporarily exceed state NSR permit allowables
- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
- (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
 - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
 - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
 - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

Permit Location

18. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

Permit Shield (30 TAC § 122.148)

19. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

Attachments

Applicable Requirements Summary

Additional Monitoring Requirements

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

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Applicable Requirements Summary15

Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (§ 122.144), Reporting Terms and Conditions (§ 122.145), and Compliance Certification Terms and Conditions (§ 122.146) continue to apply.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
AUXBLR	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
AUXBLR	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R117-1	30 TAC Chapter 117, Subchapter B	No changing attributes.
AUXBLR	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60Db	40 CFR Part 60, Subpart Db	No changing attributes.
COOLINGTWR	INDUSTRIAL PROCESS COOLING TOWERS	N/A	R5760-ALL	30 TAC Chapter 115, HRVOC Cooling Towers	No changing attributes.
DEAERATOR	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R155-B-2-3	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
FLARE	FLARES	N/A	R1111-4	30 TAC Chapter 111, Visible Emissions	No changing attributes.
FUGITIVES	FUGITIVE EMISSION UNITS	N/A	R5780-1	30 TAC Chapter 115, HRVOC Fugitive Emissions	No changing attributes.
SMR	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R115-B-2-2	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
SMR	PROCESS HEATERS/FURNACES	N/A	R7201	30 TAC Chapter 117, Subchapter B	No changing attributes.

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUXBLR	EP	R1111-1	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUXBLR	EU	R117-1	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(A) § 117.310(c)(3) § 117.8120	CO emissions must not exceed 400 ppmv at 3.0% O 2, dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(f) § 117.335(f)(3) § 117.335(g) § 117.340(a)(2)(A) § 117.340(b)(1) § 117.340(b)(3) § 117.340(e) [G]§ 117.340(g) § 117.8100(b) § 117.8100(b)(1) [G]§ 117.8100(b)(1)(A) § 117.8100(b)(1)(B) § 117.8100(b)(2) § 117.8100(b)(3) § 117.8100(b)(3)(A) § 117.8100(b)(3)(B) § 117.8100(b)(4) § 117.8100(b)(4)(A) § 117.8100(b)(4)(A)(i) § 117.8100(b)(4)(A)(i)(II) § 117.8100(b)(4)(A)(i)(III) [G]§ 117.8100(b)(4)(B) § 117.8100(b)(4)(C) § 117.8100(b)(4)(C)(i) § 117.8100(b)(4)(C)(ii) § 117.8100(b)(4)(C)(iii) § 117.8100(b)(4)(C)(iii)(I) § 117.8100(b)(4)(C)(iii)(II) § 117.8100(b)(4)(C)(iii)(II)(-a-) § 117.8100(b)(4)(C)(iii)(II)(-b-) § 117.8100(b)(5) § 117.8100(b)(6) § 117.8120(1) § 117.8120(1)(B)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(2) § 117.345(f)(7) § 117.345(f)(8) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(2) § 117.345(d)(3) § 117.345(d)(4) § 117.345(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUXBLR	EU	R117-1	NH ₃	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(2) § 117.310(c)(2)(A)	For boilers that inject urea or ammonia into the exhaust stream for NO _x control, ammonia emissions must not exceed 10 ppmv at 3.0% O ₂ , dry.	§ 117.335(a)(2) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(b)(1) § 117.340(b)(3) § 117.340(d) § 117.8000(b) § 117.8000(c) § 117.8000(c)(3) § 117.8000(c)(4) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8130 § 117.8130(3)	§ 117.345(a) § 117.345(f) § 117.345(f)(11) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUXBLR	EU	R117-1	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(A) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(f)(1) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO _x emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(f) § 117.335(g) § 117.340(a)(2)(A) § 117.340(b)(1) § 117.340(b)(3) § 117.340(c)(1) [G]§ 117.340(c)(3) [G]§ 117.340(f)(2) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(2) § 117.345(f)(8) § 117.345(f)(9) § 117.8100(a)(5)(C)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(3) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUXBLR	EU	60Db	SO ₂	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
AUXBLR	EU	60Db	PM	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
AUXBLR	EU	60Db	PM (OPACITY)	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
COOLINGTWR	blank	R5760-ALL	HIGHLY REACTIVE VOC	30 TAC Chapter 115, HRVOC Cooling Towers	§ 115.767(3) § 115.766(i)	Any site for which no stream directed to a cooling tower heat exchange system contains 5.0% or greater by weight HRVOC is exempt from the requirements of § 115.761 of this title (relating to Site-wide Cap).	§ 115.764(c) § 115.764(d) § 115.764(e)(1)	§ 115.766(c) § 115.766(d) [G]§ 115.766(e) § 115.766(i)(1)	§ 115.766(i)(2)
DEAERATOR	EP	R155-B-2-3	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(a)(2)(A) [G]§ 115.122(a)(4) § 115.127(a)(2)	A vent gas stream having a combined weight of volatile organic compounds (VOC) < 100 lbs (45.4 kg) in any continuous 24-hour period is exempt from the requirements of § 115.121(a)(1).	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2) § 115.126(4)	None
FLARE	EU	R1111-4	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
FUGITIVES	EU	R5780-1	HIGHLY REACTIVE VOC	30 TAC Chapter 115, HRVOC Fugitive Emissions	§ 115.787(a)	Components that contact a process fluid containing less than 5.0% highly-reactive volatile organic compounds by weight on an annual average basis are exempt from the requirements of this division (relating to Fugitive Emissions), except for 115.786(e) and (g) of this title (relating to Record keeping Requirements).	None	§ 115.786(e) § 115.786(g)	None
SMR	EP	R115-B-2-2	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(a)(2)(A) [G]§ 115.122(a)(4) § 115.127(a)(2)	A vent gas stream having a combined weight of volatile organic compounds (VOC) < 100 lbs (45.4 kg) in any continuous 24-hour period is exempt from the requirements of § 115.121(a)(1).	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2) § 115.126(4)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
SMR	EU	R7201	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(A) § 117.310(c)(3) § 117.340(f)(1)	CO emissions must not exceed 400 ppmv at 3.0% O ₂ , dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(f) § 117.335(f)(3) § 117.335(g) § 117.340(a)(2)(A) § 117.340(b)(1) § 117.340(b)(3) § 117.340(e) [G]§ 117.340(f)(2) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6) § 117.8120 § 117.8120(1) § 117.8120(1)(A)	§ 117.345(a) § 117.345(f) [G]§ 117.345(f)(2) § 117.345(f)(7) § 117.345(f)(8) § 117.345(f)(9) § 117.8100(a)(5)(C)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(2) § 117.345(d)(3) § 117.345(d)(4) § 117.345(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
SMR	EU	R7201	NH ₃	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(2) § 117.310(c)(2)(A)	For process heaters that inject urea or ammonia into the exhaust stream for NO _x control, ammonia emissions must not exceed 10 ppmv at 3.0% O ₂ , dry.	§ 117.335(a)(2) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(b)(1) § 117.340(b)(3) § 117.340(d) § 117.8000(b) § 117.8000(c) § 117.8000(c)(3) § 117.8000(c)(4) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8130 § 117.8130(3)	§ 117.345(a) § 117.345(f) § 117.345(f)(11) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)

Additional Monitoring Requirements

Periodic Monitoring Summary..... 25

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: AUXBLR	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111-1
Pollutant: OPACITY	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: Once per week	
Averaging Period: n/a	
<p>Deviation Limit: If visible emissions are observed, a deviation shall be reported. As an alternative, the opacity may be determined consistent with Method 9, as soon as practicable, but not later than 24 hours after observing visible emissions. Opacity Limit =15%.</p>	
<p>Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor.</p>	
<p>If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions.</p>	
<p>If the result of the Test Method 9 is an opacity above the corresponding opacity limit, the permit holder shall report a deviation.</p>	

Permit Shield

Permit Shield 27

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
AUXBLR	N/A	40 CFR Part 63, Subpart DDDDD	Site is not a major source of HAPs.
AUXBLR	N/A	40 CFR Part 63, Subpart JJJJJ	Gas-fired boilers are exempt from this Subpart.
CO2VENTDIS	N/A	30 TAC Chapter 115, HRVOC Vent Gas	Vent stream contains no HRVOCs.
CO2VENTDIS	N/A	30 TAC Chapter 115, Vent Gas Controls	Vent emits less than 100 lb VOCs per 24 hour period
CO2VENTDIS	N/A	40 CFR Part 64, Compliance Assurance Monitoring	Unit does not use a control device to comply with any emission limitation or standard
CO2VENTSUC	N/A	30 TAC Chapter 115, HRVOC Vent Gas	Vent stream contains no HRVOCs
CO2VENTSUC	N/A	30 TAC Chapter 115, Vent Gas Controls	Vent emits less than 100 lb VOCs per 24 hour period
CO2VENTSUC	N/A	40 CFR Part 64, Compliance Assurance Monitoring	Unit does not use a control device to comply with any emission limitation or standard
COOLINGTWR	N/A	40 CFR Part 63, Subpart Q	Facility is not major for HAPs.
DEAERATOR	N/A	30 TAC Chapter 115, HRVOC Vent Gas	Vent stream contains no HRVOCs.
DEAERATOR	N/A	30 TAC Chapter 115, Vent Gas Controls	Vent emits less than 100 lb VOCs per 24 hour period.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
FLARE	N/A	30 TAC Chapter 115, Vent Gas Controls	Flare receives streams that are less than 5.0 wt.% HRVOCs and all individual vent gas streams not routed to a flare contain less than 100 ppmv HRVOC at all times.
FLARE	N/A	30 TAC Chapter 117, Subchapter B	Flares are specifically exempt from 30 TAC Chapter 117 B.
FUGITIVES	N/A	30 TAC Chapter 115, Fugitives Pet Ref B Counties	Facility is not located in an affected county.
FUGITIVES	N/A	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	Facility is not a petroleum refinery; a synthetic organic chemical, polymer, resin, or methyl-tert-butyl ether manufacturing process; or a natural gas/gasoline processing operation, as defined in §115.10.
FUGITIVES	N/A	40 CFR Part 60, Subpart DDD	Facility is not a polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) manufacturing facility.
FUGITIVES	N/A	40 CFR Part 60, Subpart GGG	Facility is not a petroleum refinery.
FUGITIVES	N/A	40 CFR Part 60, Subpart KKK	Facility is not an onshore natural gas processing plant
FUGITIVES	N/A	40 CFR Part 60, Subpart VV	Facility is not a synthetic organic chemicals manufacturing industry.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
FUGITIVES	N/A	40 CFR Part 61, Subpart F	Facility does not produce ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene, vinyl chloride by any process, and/or one or more polymers containing any fraction of polymerized vinyl chloride.
FUGITIVES	N/A	40 CFR Part 61, Subpart J	Facility does not have equipment in benzene service.
FUGITIVES	N/A	40 CFR Part 61, Subpart V	Facility does not have equipment in VHAP service.
FUGITIVES	N/A	40 CFR Part 63, Subpart CC	Facility dose not contain petroleum refinery process units.
FUGITIVES	N/A	40 CFR Part 63, Subpart H	Facility does not have components in HON service.
FUGITIVES	N/A	40 CFR Part 63, Subpart HH	Not an oil and natural gas production facility.
FUGITIVES	N/A	40 CFR Part 63, Subpart I	Facility is not a major source of HAPs.
SMR	N/A	40 CFR Part 63, Subpart DDDDD	Site is not a major source of HAPs.
SMR	N/A	40 CFR Part 63, Subpart JJJJJ	This unit is a process heater, not a boiler, and is exempt from this Subpart.

New Source Review Authorization References

New Source Review Authorization References 32

New Source Review Authorization References by Emission Unit..... 33

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: PSDTX995M1	Issuance Date: 05/30/2008
Nonattainment (NA) Permits	
NA Permit No.: No42	Issuance Date: 05/30/2008
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 32274	Issuance Date: 05/30/2008
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 106.261	Version No./Date: 11/01/2003

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
AUXBLR	AUXILIARY BOILER	32274, 106.261/11/01/2003, No42, PSDTX995M1
CO2VENTDIS	CO2 COMPRESSOR DISCHARGE SIDE VENT	32274, No42, PSDTX995M1
CO2VENTSUC	CO2 COMPRESSOR SUCTION SIDE VENT	32274, No42, PSDTX995M1
COOLINGTWR	COOLING TOWER	32274, No42, PSDTX995M1
DEAERATOR	DEAERATOR	32274, No42, PSDTX995M1
FLARE	FACILITY FLARE	32274, No42, PSDTX995M1
FUGITIVES	PLANT FUGITIVES	32274, 106.261/11/01/2003, No42, PSDTX995M1
SMR	STEAM METHANE REFORMER	32274, No42, PSDTX995M1

Appendix A

Acronym List 35

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM	.....	actual cubic feet per minute
AMOC	.....	alternate means of control
ARP	.....	Acid Rain Program
ASTM	.....	American Society of Testing and Materials
B/PA	.....	Beaumont/Port Arthur (nonattainment area)
CAM	.....	Compliance Assurance Monitoring
CD	.....	control device
COMS	.....	continuous opacity monitoring system
CVS	.....	closed-vent system
D/FW	.....	Dallas/Fort Worth (nonattainment area)
DR	.....	Designated Representative
ELP	.....	El Paso (nonattainment area)
EP	.....	emission point
EPA	.....	U.S. Environmental Protection Agency
EU	.....	emission unit
FCAA Amendments	.....	Federal Clean Air Act Amendments
FOP	.....	federal operating permit
GF	.....	grandfathered
gr/100 scf	.....	grains per 100 standard cubic feet
HAP	.....	hazardous air pollutant
H/G/B	.....	Houston/Galveston/Brazoria (nonattainment area)
H ₂ S	.....	hydrogen sulfide
ID No.	.....	identification number
lb/hr	.....	pound(s) per hour
MMBtu/hr	.....	Million British thermal units per hour
MRRT	.....	monitoring, recordkeeping, reporting, and testing
NA	.....	nonattainment
N/A	.....	not applicable
NADB	.....	National Allowance Data Base
NO _x	.....	nitrogen oxides
NSPS	.....	New Source Performance Standard (40 CFR Part 60)
NSR	.....	New Source Review
ORIS	.....	Office of Regulatory Information Systems
Pb	.....	lead
PBR	.....	Permit By Rule
PM	.....	particulate matter
ppmv	.....	parts per million by volume
PSD	.....	prevention of significant deterioration
RO	.....	Responsible Official
SO ₂	.....	sulfur dioxide
TCEQ	.....	Texas Commission on Environmental Quality
TSP	.....	total suspended particulate
TVP	.....	true vapor pressure
U.S.C.	.....	United States Code
VOC	.....	volatile organic compound

Appendix B

Major NSR Summary Table..... 37

Major NSR Summary Table

Permit Number: 32274, No42, PSDTX995M1			Issuance Date: 05/30/2008				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
SMRSTACK	Steam Methane Reformer (SMR) Stack	NOx	8.52	37.32	8, 13, 14, 16	8, 13, 14, 16, 18, 19, 20	13, 14
SMRSTACK	Steam Methane Reformer (SMR) Stack	PM	2.28	9.99	8	8, 18, 20	
SMRSTACK	Steam Methane Reformer (SMR) Stack	CO	4.35	19.05	8, 13, 14	8, 13, 14, 18, 19, 20	13, 14
SMRSTACK	Steam Methane Reformer (SMR) Stack	NH3	1.97	8.63	8, 13, 15, 17	8, 13, 15, 17, 18, 19, 20	13
SMRSTACK	Steam Methane Reformer (SMR) Stack	VOC	1.39	6.06	8, 13	8, 13, 18, 20	13, 23
SMRSTACK	Steam Methane Reformer (SMR) Stack	SO2	3.87	16.95	7, 8	7, 8, 18, 20	
SMRSTACK	Steam Methane Reformer (SMR) Stack	H2S	0.01	0.01	7, 8	7, 8, 18, 20	
SMRSTACK	Steam Methane Reformer (Planned Maintenance, Startup, Shutdown)	CO	23.69(6)		8, 13, 14	4, 8, 13, 14, 18, 19, 20	13, 14
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	NOx	8.80	35.04	9, 12, 13, 14, 16	4, 9, 12, 13, 14, 16, 18, 19, 20	12, 13, 14
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	PM	8.80	35.04	9, 12	4, 9, 12, 18, 20	12
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	CO	42.24	168.19	9, 12, 13, 14	4, 9, 12, 13, 14, 18, 19, 20	12, 13, 14
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	NH3	3.05	12.14	9, 12, 13, 15, 17	4, 9, 12, 13, 14, 15, 17, 18, 19, 20	12, 13
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	VOC	2.13	8.51	9, 12, 13	4, 9, 12, 13, 18, 20	12, 13, 23
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	SO2	6.00	23.88	7, 9, 12	4, 7, 9, 12, 18, 20	12
AUXSTACK	Auxiliary Boiler Stack (440 MMBtu/hr-HHV)	H2S	0.01	0.01	7, 9, 12	4, 7, 9, 12, 18, 20	12
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	NOx	0.52	2.29	10	10, 18, 19	

TCEQ-20648 (Revised 02/13) Major NSR Summary Table – Instructions

This form is for use by facilities subject to air quality permit requirements and may be revised periodically. (APDG 6193v1)

Permit Number: 32274, No42, PSDTX995M1			Issuance Date: 05/30/2008				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	CO	37.80	165.57	10	10, 18, 19	
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	VOC	0.01	0.05	10	10, 18, 19	23
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	SO ₂	0.01	0.02	7, 10	7, 10, 18, 19	
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	H ₂ S	0.01	0.01	7, 10	7, 10, 18, 19	
FLARESTACK	Facility Flare (Startup, Shutdown, and Maintenance)	NO _x	56.76	31.69	10	4, 10, 18, 19	
FLARESTACK	Facility Flare (Startup, Shutdown, and Maintenance)	CO	408.54	451.59	10	4, 10, 18, 19	
FLARESTACK	Facility Flare (Startup, Shutdown, and Maintenance)	VOC	57.59	18.71	10	4, 10, 18, 19	23
FLARESTACK	Facility Flare (Startup, Shutdown, and Maintenance)	SO ₂	1.09	0.35	7, 10	4, 7, 10, 18, 19	
FLARESTACK	Facility Flare (Startup, Shutdown, and Maintenance)	H ₂ S	0.01	0.01	7, 10	4, 7, 10, 18, 19	
FUGITIVES	Facility fugitives (4)	VOC	0.15	0.68	21	18, 21	23
FUGITIVES	Facility fugitives (4)	CO	9.00	39.44	21	18, 21	
COOLINGTWR	Cooling Tower (4)	VOC	0.27	1.18	22	18, 22	23
CO ₂ VENTSUC/ CO ₂ VENTDIS	CO ₂ Recycle Suction Vent/CO ₂ Recycle Discharge Vent (5)	CO	88.26	193.30		18	
DEAERATOR	Boiler Feedwater Deaerator	VOC	0.01	0.01		18	23

Footnotes:

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.

(3) NO_x - total oxides of nitrogen

PM - particulate matter, suspended in the atmosphere, including PM₁₀

PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.

CO - carbon monoxide

NH₃ - ammonia

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

SO₂ - sulfur dioxide

H₂S - hydrogen sulfide

(4) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations.

(5) Emissions for the two vents combined will not exceed 88.26 pounds per hour or 193.30 tons per year.

(6) An hourly CO rate of 23.69 lb/hr is applicable during periods of planned maintenance, start-up, and shutdown of the SMR. Emissions from MSS activities at the SMRSTACK shall be combined with normal emissions for the purposes of annual emissions reporting.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

MR RENE LOPEZ
PLANT MANAGER
AIR LIQUIDE LARGE INDUSTRIES US LP
2398 VICTORIA ST
FREEPORT TX 77541

Re: Permit Amendment
Permit Numbers: 32274, PSD-TX-995M1, and N-042
Hydrogen and Carbon Monoxide Production Facility
Freeport, Brazoria County
Regulated Entity Number: RN100215334
Customer Reference Number: CN600300693
Account Number: BL-0626-U

Dear Mr. Lopez:

This is in response to your letter received on October 12, 2007 and your Form PI-1 (General Application for Air Preconstruction Permits and Amendments) concerning the proposed amendment to Permit Numbers 32274, PSD-TX-995M1, and N-042. We understand that you propose to authorize higher nitrogen oxides and carbon monoxide concentrations from steam methane reformer (SMR) and auxiliary boiler during planned maintenance, start-up, and shutdown activities and authorize crude hydrogen as fuel to be burned in the SMR and the auxiliary boiler. Also, this will acknowledge that your application for the above-referenced amendment is technically complete as of May 5, 2008.

As indicated in Title 30 Texas Administrative Code § 116.116(b) [30 TAC § 116.116(b)], and based on our review, Permit Numbers 32274, PSD-TX-995M1, and N-042 is hereby amended. This information will be incorporated into the existing permit file. Enclosed are revised special conditions pages and a maximum allowable emission rates table (MAERT) to replace those currently attached to your permit. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met.

Planned maintenance, start-up, and shutdown for the sources identified on the MAERT have been reviewed and included in the MAERT and specific maintenance activities are identified in the permit special conditions. Any other maintenance activities are not authorized by this permit and will need to obtain separate authorization.

Mr. Rene Lopez
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Re: Permit Numbers 32274, PSD-TX-995M1, and N-042

As of July 1, 2008, all analytical data generated by a mobile or stationary laboratory in support of compliance with air permits must be obtained from a NELAC (National Environmental Laboratory Accreditation Conference) accredited laboratory under the Texas Laboratory Accreditation Program or meet one of several exemptions. Specific information concerning which laboratories must be accredited and which are exempt may be found in 30 TAC §§ 25.4 and 25.6.

For additional information regarding the laboratory accreditation program and a list of accredited laboratories and their fields of accreditation, please see the following website:

http://www.tceq.state.tx.us/compliance/compliance_support/qa/env_lab_accreditation.html

For questions regarding the accreditation program, you may contact the Texas Laboratory Accreditation Program at (512) 239-3754 or by e-mail at labprgms@tceq.state.tx.us.

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the Texas Commission on Environmental Quality (TCEQ) Executive Director's approval of the application. Any motion must explain why the commission should review the TCEQ Executive Director's action.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 11 copies of a motion must be filed with the Chief Clerk in person or by mail. The Chief Clerk's mailing address is Office of the Chief Clerk (MC-105), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the Chief Clerk, please provide copies to Mr. Robert Martinez, Director, Environmental Law Division (MC-173), and Mr. Blas J. Coy, Jr., Public Interest Counsel (MC-103), both at the same TCEQ address above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

Thank you for your cooperation and interest in air pollution control. If you need further information or have any questions, please contact Dr. Ozden Tamer at (512) 239-4577 or write to the Texas Commission on Environmental Quality, Office of Permitting, Remediation, and Registration, Air Permits Division (MC-163), P.O. Box 13087, Austin, Texas 78711-3087.

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Re: Permit Numbers 32274, PSD-TX-995M1, and N-042

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Richard A. Hyde, P.E., Director
Air Permits Division
Office of Permitting, Remediation, and Registration
Texas Commission on Environmental Quality

RAH/MOT/ssl

Enclosures

cc: Director, Environmental Health, Brazoria County Health Department, Angleton
Air Section Manager, Region 12 - Houston

Project Number: 133447

SPECIAL CONDITIONS

Flexible Permit Numbers 32274, PSD-TX-995M1, and N-042

EMISSION STANDARDS, FUEL SPECIFICATIONS, AND OPERATING PRACTICES

1. This permit authorizes emissions only from those points listed in the attached table entitled “Emission Sources - Maximum Allowable Emission Rates,” and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions.
2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table (MAERT). Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions. **(6/05)**
3. This permit authorizes maintenance, start-up, and shutdown (MSS) emissions from the following emissions sources and emission point numbers (EPNs): **(5/08)**
 - A. Facility Flare (EPN FLARESTACK)
 - B. SMR Stack (EPN SMRSTACK)
 - C. Auxiliary Boiler (EPN AUXSTACK)

The MSS activities at the Facility Flare (EPN FLARESTACK) are limited to the following:

Reformer Start-Up/Shutdown	6 per year
Cold Box Start-Up/Shutdown	12 per year
PSA Start-Up/PSA Shutdown with and without Crude Hydrogen (H ₂) Import	36 per year
Carbon Monoxide (CO) Customer Minor and Major Maintenance	5 per year
CO Customer Shutdown	60 per year
H ₂ Customer Shutdown	24 per year
AUX. Boiler Start-Up/Shutdown	18 SU/18 SD per year

The MSS activities at the SMR stack (EPN SMRSTACK) are limited to the following:

Steam Drum Inspection	Once per year
Induction Draft Fan inspection	Once per year
SCR Inspection/Replacement	Once in 3 years
SMR Tube/Refractory Inspection	Once in 3 years
E-101 Exchanger Cleaning	Four times per year
Customer Outage	Once per year

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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Feed/Fuel Valve Inspection Repair	Once per year
Natural Gas Feed Compressor Inspection	Once in 3 years
Flare Pilot Tip Inspection	Once in 2 years
Amine System Inspection	Once in 3 years
SMR Reforming Catalyst Replacement	Once in 6 years
Electrical Breaker/Transformer PMs	Once in 3 years
PSV Replacement/Certification	Once in 5 years

The MSS activities at the Auxiliary Boiler Stack (EPN AUXSTACK) are limited to the following:

Steam Drum Inspection	Once per year
Forced Draft Fan Inspection	Once per year
SCR Inspection/Replacement	Once in 3 years
Boiler Tube Inspection	Once in 3 years
Customer Outage	Four times per year
Feed/Fuel Valve Inspection Repair	Once per year
Flare Pilot Tip Inspection	Once in 2 years
Electrical Transformer PMs	Once in 3 years
PSV Replacement/Certification	Once in 5 years
Refractory Inspection/Repair	Once in 3 years

4. Any MSS activities not listed in Special Condition No. 3 are not authorized by this permit. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The performance of each maintenance activity and the emissions associated with it shall be recorded and the rolling 12-month emissions shall be updated on a monthly basis. These records shall include at least the following information:
 - A. The physical location at which emissions from the MSS activity occurred, including the emission point number, common name, and any other identifier for the point at which the emissions were released into the atmosphere;
 - B. The type of planned MSS activity and the reason for the planned activity;
 - C. The common name and the facility identification number of the facilities at which the MSS activity and emissions occurred;
 - D. The date and time of the MSS activity and its duration; and

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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- E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit representations, consistent with good engineering practice.

If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knock-out drum or equivalent for initial phase separation. If the cumulative air contaminant partial pressure is greater than 0.5 pound per square inch (psi) at the normal process temperature or 95°F, any vents in the system must be routed to the Facility Flare (EPN FLARESTACK). All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence maintenance. Liquids must be stored in a closed vessel until transferred to permanent storage or treatment.

Any gas or vapor removed from process equipment or storage vessels must be routed to the facility flare if cumulative contaminant partial pressure is greater than 0.5 psi at the normal process temperature or 95°F. Control must be maintained until the cumulative contaminant concentration is less than 34,000 parts per million by volume (ppmv) as methane. The process equipment or storage vessels shall be depressurized to the flare prior to degassing. The facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the flare to the extent allowed by process equipment or storage vessel design. The locations and/or identifiers where the purge (or flush if a liquid is used) material enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded.

If the process equipment or storage vessel is purged with a gas, two system volumes of purge gas must have passed through the control device, before the vent stream may be sampled to verify acceptable air pollutant (VOC or non-VOC) concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in Section 8.1 of the U.S. Environmental Protection Agency (EPA) Method 21 (Title 40 Code of Federal Regulations [40 CFR] Part 60, Appendix A). Sampling shall be performed as follows:

- F. Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain between 0 and 10 ppmv total hydrocarbons. Span calibration gas shall be methane at a concentration between 34,000 and 50,000 ppmv, and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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must be less than 5 percent of the span calibration gas value before sampling may be conducted. The results of these checks shall be recorded.

- G. The sampling point shall be upstream of the inlet to the flare. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.
 - H. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording one-minute averages. The highest one-minute average measured VOC concentration shall not exceed 34,000 ppmv as methane prior to uncontrolled venting. **(5/08)**
5. Exhaust oxides of nitrogen (NO_x) emissions from the steam methane reformer (SMR) shall be controlled with a selective catalytic reduction (SCR) system. Emissions from the SMR shall not exceed:
- A. 20.7 parts per million by volume (ppmvd) NO_x , dry basis, at 3 percent oxygen (O_2) based upon a three-hour average.
 - B. 25 ppmvd CO, at 3 percent O_2 based upon a three-hour average.
 - C. 10 ppmvd ammonia (NH_3), at 3 percent O_2 .
 - D. 99.51 ppmvd NO_x , at 3 percent O_2 based on a three-hour average during planned MSS events listed in Special Condition No. 3.
 - E. 944.6 ppmvd CO, at 3 percent O_2 based on a three-hour average during planned MSS events listed in Special Condition No. 3.

Compliance with the short-term NO_x and CO emission rates listed in the attached table for the SMR shall be determined on a rolling three-hour average. **(5/08)**

6. Exhaust NO_x emissions from the auxiliary boiler shall be controlled with a SCR system.

Emissions from the boiler shall not exceed:

- A. 12.1 ppmvd NO_x , at 3 percent O_2 based upon a three-hour average.

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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- B. 100 ppmvd CO, at 3 percent O₂ based upon a three-hour average while firing natural gas and 130 ppmvd CO, at 3 percent O₂ based upon a three-hour average while firing a combination of natural gas and plant off-gases.
- C. 10 ppmvd NH₃, at 3 percent O₂.
- D. 87.55 ppmvd NO_x at 3 percent O₂-based on a three-hour average, during planned MSS activities listed in Special Condition No. 3.
- E. 405.8 ppmvd CO, at 3 percent O₂ based on three-hour average, during planned MSS activities listed in Special Condition No. 3.

Compliance with the short-term NO_x and CO emission rates listed in the attached table for the auxiliary boiler shall be determined on a rolling three-hour average. **(5/08)**

- 7. Fuels for the SMR and the auxiliary boiler are limited to PSA off-gas, cold box off-gas, crude hydrogen, Regen gas and sweet natural gas containing no more than 5 grains of sulfur per 100 dry standard cubic feet (dscf). Fuel for the flare pilots is limited to sweet natural gas containing no more than 5 grains of sulfur per 100 dscf. The sulfur content of the natural gas shall be documented by a sample taken and analyzed every quarter. The sample and analysis may be performed by the gas supplier. If the samples taken during the first two years are all no greater than 5 grains of sulfur per 100 dscf, then the sampling period (for sulfur content of the natural gas) may be extended to an annual verification. **(6/05)**
- 8. The SMR heater firing rate shall not exceed 284 million MMBtu per hour (hr), determined by fuel flow at the higher heating value of the fuel. **(6/05)**
- 9. The auxiliary boiler firing rate shall not exceed 440 MMBtu/hr, determined by fuel flow at the higher heating value of the fuel. **(6/05)**
- 10. Flares shall be designed and operated in accordance with the following requirements:
 - A. The process streams to the flare shall meet the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Compliance with this condition shall be demonstrated by monitoring required in section D below.
 - B. The flare shall be operated with a flame present at all times of the active process stream flaring and have a constant pilot flame. The pilot flame shall be monitored by a thermocouple, an infrared monitor, or a TCEQ-approved equivalent device or method to detect the presence of a flame.

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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- C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.
 - D. The holder of this permit shall install a continuous flow monitor and an analyzer, or TCEQ Air Permits Division-approved equivalent, that provide a record of the vent stream flow and heat input (Btu) to the flare. The flow monitor sensor and analyzer sample points should be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. The average hourly values of the flow and heat input (Btu) shall be recorded. Records of the hourly averages shall be maintained for two years and be made available to the Executive Director of the TCEQ upon request. **(6/05)**
11. While filling the aqueous NH₃ tank, it shall be vented back to the NH₃ tank truck or to the flare. The truck connections to the tank shall be checked while filling the tank. The loading shall be secured and corrective action taken if any leakage is noted. The NH₃ storage tank shall be equipped with a high liquid level trip to automatically stop overfilling of the tank. **(6/05)**

FEDERAL APPLICABILITY

12. The Auxiliary Boiler (EPN AUXSTACK) (Facility Identification No. [FIN] AUXBLR), shall comply with all applicable requirements of the EPA regulations on Standards of Performance for New Stationary Sources promulgated for Industrial-Commercial-Institutional Steam Generating Units in 40 CFR Part 60, Subparts A and Db. If any condition of this permit is more stringent than the regulations so incorporated, then for the purposes of complying with this permit, the permit condition shall govern and be the standard by which compliance shall be demonstrated. **(6/05)**

COMPLIANCE TESTING

13. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the SMR Stack (EPN SMRSTACK) and the Auxiliary Boiler Stack (EPN AUXSTACK). The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. (EPN

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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AUXSTACK testing completed on July 1998 and EPN SMRSTACK testing completed on September 2001).

- A. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions or TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director or the Director of the TCEQ Austin Compliance Support Division shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for New Source Performance Standards (NSPS) testing which must have the EPA approval shall be submitted to the TCEQ Austin Compliance Support Division.

- B. Components emitted from the SMR and boiler to be tested for include (but are not limited to) NO_x, NH₃, CO, O₂, and VOC. Emission rates of NO_x, NH₃, and CO shall be reported in both pound per hour (lb/hr) and ppmvd for compliance testing.
- C. Sampling shall occur within 60 days after initial start-up of the facilities and at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office.

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Austin Compliance Support Division.

- D. The plant shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. The SCR catalyst temperature and NH₃ injection rate shall also be recorded. These parameters are to be determined at the pretest meeting. If the plant is unable to operate at maximum rates during testing, then future production rates may be limited to the rates established during testing. Additional stack testing may be required when higher production rates are achieved.
- E. Three copies of the final sampling report shall be forwarded to the TCEQ within 45 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Houston Regional Office.

One copy to the Brazoria County Health Department, Angleton.

One copy to the TCEQ Austin Compliance Support Division.

- F. Stack sampling shall be repeated as often as required by the Executive Director of the TCEQ after the initial sampling in conformity with A, B, and D of this condition.
(6/05)

CONTINUOUS EMISSIONS MONITORING

- 14. The holder of this permit shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) to measure and record the concentrations of NO_x, CO, and O₂ at the SMR Stack (EPN SMRSTACK) and the Auxiliary Boiler Stack (EPN AUXSTACK). The NO_x and CO concentrations shall be corrected in accordance with Special Condition Nos. 5 and 6. The CEMS shall comply with the following requirements:
 - A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specifications No. 1 through 7, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division in Austin for requirements to be met.

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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- B. The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 7, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured in accordance with 40 CFR Part 60, Appendix F, Procedure 1. Cylinder Gas Audits (CGA) conducted in all four calendar quarters may be used in lieu of the relative accuracy test audit for the boiler CO CEMS and the SMR CEMS. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy and any CEMS downtime shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

- C. The monitoring data shall be reduced to hourly average concentrations at least once everyday, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in lb/hr at least once everyday.
- D. All monitoring data and quality-assurance data shall be maintained by the source for a period of two years and shall be made available to the TCEQ Executive Director or designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
15. The NH_3 injection rate to each SCR unit shall be continuously monitored and recorded at least once an hour.
16. The catalyst temperature of each SCR unit shall be continuously monitored and recorded at least once an hour.
17. The gaseous NH_3 concentration in the SMR and auxiliary boiler stack gas shall be tested according to one of the methods and the frequency listed below. All methods are subject to the compliance requirements of Special Condition Nos. 5 and 6 and recordkeeping requirements of Special Condition Nos. 18 and 19. Any other method used for measuring

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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NH₃ slip shall require prior approval from the TCEQ Office of Compliance and Enforcement, Compliance Support Division. Testing for NH₃ slip is only required on days when the SMR or auxiliary boiler are in operation.

- A. Method 1: The holder of this permit may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH₃.
- B. Method 2: The NH₃ slip may be measured using a sorbent or stain tube device specific for NH₃ measurement in the 5 to 10 ppm range. The frequency of sorbent or stain tube testing shall be until operating procedures have been developed to prevent excess amounts of NH₃ from being introduced in the SMR and the auxiliary boiler and have proven successful with regard to controlling NH₃ slip. Successful control is defined, in this section, as ten successive daily readings of eight ppm NH₃ or less with the SMR and auxiliary boiler in operation with NH₃ controls for NO_x. Following the successful control of NH₃ slip, the frequency may be reduced to weekly testing. If the weekly sorbent or stain tube testing indicates an NH₃ slip concentration which exceeds eight ppm at two consecutive tests, the permit holder shall begin NH₃ testing by either the Phenol-Nitroprusside Method, the Indophenol Method, or the EPA Conditional Test Method CTM-027 on a quarterly basis until such time as the SCR unit catalyst is replaced; or until the quarterly testing indicates NH₃ slip is eight ppm or less; or until the weekly sorbent stain tube testing indicates a NH₃ slip of eight ppm or less. Note that the Method CTM-027 may be modified to allow use of a Method 6 Train with ion chromatography (without isokinetic sampling and glass sampling train) as an acceptable alternative for NH₃ testing in this case. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy.
- C. Method 3: As an approved alternative to measuring NH₃ using sorbent or stain tube testing, NH₃, CEMS, or a second NO_x CEMS, the permit holder may install and operate a dual stream system of NO_x CEMS at the exit of the SMR or auxiliary boiler. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS and the other exhaust stream would be routed through a NH₃ converter to convert NH₃ to NO_x and then to a second NO_x CEMS. The NH₃ slip concentration shall be calculated from the delta between the two NO_x CEMS readings (converted and unconverted). **(11/02)**

RECORDKEEPING

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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18. All records required by the conditions of this permit shall be maintained on-site for a minimum of two years. They shall be made available to the TCEQ Executive Director or a designated representative upon request.
19. The following data shall be maintained by the source on a two-year rolling retention basis and shall be made available to the TCEQ Executive Director or a designated representative, or any local air pollution control program with jurisdiction, upon request:
 - A. For the SMR:
 - (1) Average hourly NO_x emissions in lb/hr.
 - (2) Average hourly NO_x emissions in ppmvd at 3 percent O₂.
 - (3) Average hourly actual CO emissions in lb/hr.
 - (4) Average hourly CO emissions in ppmvd at 3 percent O₂.
 - (5) The results of all sampled NH₃ concentrations.
 - B. For Auxiliary Boiler:
 - (1) Average hourly NO_x emissions in lb/hr.
 - (2) Average hourly NO_x emissions in ppmvd at 3 percent O₂.
 - (3) Average hourly actual CO emissions in lb/hr.
 - (4) Average hourly CO emissions in ppmvd at 3 percent O₂.
 - (5) The results of all sampled NH₃ concentrations.
 - C. The holder of this permit shall maintain a raw data file of all CEMS measurements, including CEMS performance testing measurements, and all CEMS calibration checks and adjustments and maintenance performed on these systems in a permanent form suitable for inspection for at least two years.
 - D. For the Flare:
 - (1) Average hourly flow rates to the flare.
 - (2) Average hourly Btu content of vent stream to the flare. **(6/05)**

COMPLIANCE CONDITION

SPECIAL CONDITIONS

Permit Numbers 32274, PSD-TX-995M1, and N-042

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20. After the required demonstrations of initial compliance for this facility, fuel sulfur sampling, CEMS and NH₃ testing records required in Special Condition Nos. 8, 15, and 18 shall be used to determine continuous compliance with the conditions of this permit and the rules and regulations of the TCEQ. **(6/05)**

LEAK DETECTION AND REPAIR PROGRAM

21. Piping, Valves, Connectors, Pumps, Agitators, and Compressors in VOC Service - Intensive Directed maintenance - 28LAER

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

- A. With the exception of paragraph N, these conditions shall not apply where (1) VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68°F, or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure, (3) pipeline quality natural gas streams. Equipment excluded from this condition shall be identified in a list to be made available upon request.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers, or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory

SPECIAL CONDITIONS

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means at least weekly by operating personnel walk-through. In addition, all connectors shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Non-accessible valves shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a)-(b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

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All other pump, compressor, and agitator seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

- H. Damaged or leaking valves, connectors, agitator seals, compressor seals, and pump seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
- I. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
- J. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable National Emission Standard for Hazardous Air Pollutants and does not constitute approval of alternative standards for these regulations.
- K. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

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- L. The percent of valves leaking used in paragraph K shall be determined using the following formula:

$$(V1 + Vs) \times 100/Vt = Vp$$

Where:

- V1 = the number of valves found leaking by the end of the monitoring period, either by Method 21, or sight, sound, and smell.
- Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.
- Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.
- Vp = the percentage of leaking valves for the monitoring period.
- M. Alternative connector monitoring frequency schedules of 40 CFR Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the annual connector instrument monitoring required by paragraph E of this permit condition.

- N. Any component found to be leaking by physical inspection (i.e., sight, sound, or smell) shall be repaired or monitored with an approved gas analyzer within 15 days to determine whether the component is leaking in excess of 500 ppmv of VOC. If the component is found to be leaking in excess of 500 ppmv of VOC, it shall be subject to the repair and replacement requirements contained in this special condition. **(6/01)**

COOLING TOWER

22. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures

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Manual, Appendix P (dated January 2003 or a later edition), or another air stripping method approved by the TCEQ Executive Director.

Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.8 ppmw. The VOC concentrations above 0.8 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded. **(7/06)**

EMISSION REDUCTIONS

23. This permit amendment is conditioned on the following:

Use of Air Liquide ERC Certificate Number 1566 for 42 tons per year (tpy) (dated May 1, 2002) to offset 4.8 tpy additional VOC emission increases due to the emission rate corrections, prior to the start-up of the operations authorized by this amendment. **(6/05)**

Dated May 30, 2008

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

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This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
SMRSTACK	Steam Methane Reformer (SMR) Stack	NO _x	8.52	37.32
		PM	2.28	9.99
		CO	4.35	19.05
		NH ₃	1.97	8.63
		VOC	1.39	6.06
		SO ₂	3.87	16.95
		H ₂ S	0.01	0.01
		Steam Methane Reformer (Planned Maintenance, Startup, and Shutdown)	CO	23.69 (6)
AUXSTACK	Auxiliary Boiler Stack (440MMBtu/hr HHV)	NO _x	8.80	35.04
		PM	8.80	35.04
		CO	42.24	168.19
		NH ₃	3.05	12.14
		VOC	2.13	8.51
		SO ₂	6.00	23.88
		H ₂ S	0.01	0.01
FLARESTACK	Facility Flare-Batch Process Flaring (Routine)	NO _x	0.52	2.29
		CO	37.80	165.57
		VOC	0.01	0.05
		SO ₂	0.01	0.02
		H ₂ S	0.01	0.01
		Facility Flare	NO _x	56.76	31.69

	(Startup, Shutdown, and Maintenance)	CO	408.54	451.59
		VOC	57.59	18.71
		SO ₂	1.09	0.35
		H ₂ S	0.01	0.01
FUGITIVES	Facility Fugitives (4)	VOC	0.15	0.68
		CO	9.00	39.44
COOLINGTWR	Cooling Tower (4)	VOC	0.27	1.18
CO ₂ VENTSUC/ CO ₂ VENTDIS	CO ₂ Recycle Suction Vent/ CO ₂ Recycle Discharge Vent	CO (5)	88.26	193.30
DEAERATOR	Boiler Feedwater Deaerator	VOC	0.01	0.01

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) NO_x - total oxides of nitrogen
PM - **particulate matter, suspended in the atmosphere, including PM₁₀**
PM₁₀ - **particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.**
- CO - carbon monoxide
NH₃ - ammonia
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
SO₂ - sulfur dioxide
H₂S - hydrogen sulfide
- (4) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations..
- (5) Emissions for the two vents combined will not exceed 88.26 pounds per hour or 193.30 tons per year.
- (6) An hourly CO rate of 23.69 lb/hr is applicable during periods of planned maintenance, start-up, and shutdown of the SMR. Emissions from MSS activities at the SMRSTACK shall be combined with normal emissions for the purposes of annual emissions reporting.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

Dated _____