ELECTRIC GENERATING UNIT (EGU) REVISED STANDARD PERMIT REGISTRATION

Space Exploration Technologies, Corp.
Starlink Factory Bastrop

Prepared By:

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9737 Great Hill Trail, Ste 340
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September 2026

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1. INTRODUCTION

1.1 Introduction

The Space Exploration Technologies, Corp. (SpaceX) Starlink Factory Bastrop operates a satellite ground terminal manufacturing process at 858 FM 1209, Bastrop, Bastrop County, Texas 78602. SpaceX plans to construct and operate an electric generating facility to generate power for internal use. SpaceX is submitting this Air Quality Standard Permit for Electric Generating Units permit registration to authorize the construction and operation of the proposed electric generating facility.

The Starlink Factory Bastrop operates under TCEQ Regulated Entity Number RN111897583. The TCEQ Customer Number for SpaceX is CN602867657. An area map is included in Section 3.

1.2 Project Description

The purpose of this standard permit registration is to authorize the installation and operation of four (4) 37.16 Megawatt (MW) GE Vernova LM2500 gas-fired turbines for a total of 149 MW of power.

Facilities and emissions authorized with this permit registration include natural gas fired turbine combustion.

Table 1-1 at the end of this Section presents a summary of the project sources and emission rates. As outlined in Table 1-1 the project emissions are below the major source thresholds for all pollutants; therefore, PSD permitting requirements do not apply.

1.3 Registration Organization

The enclosed Standard Permit registration is organized into the following sections:

Section 1	Contains background information about the planned project.
Section 2	Describes the administrative forms and fee payments included with this submittal.
Section 3	Contains an area map showing the location of the project and the surrounding area.
Section 4	Contains a general process description and process flow diagram.
Section 5	Describes the emission calculation methods used for the project.
Section 6	Addresses Federal New Source Review applicability.
Section 7	Addresses the applicability and general conditions for an EGU Standard Permit as specified in 30 TAC § 116.610, § 116.615, and Air Quality Standard Permit for Electric Generating Units (Effective Date: May 16, 2007).
Appendix A	Contains emissions calculation details.
Appendix B	Contains TCEQ Table 31 (Turbine Equipment Table)
Appendix C	Contains a copy of the Electric Generating Unit Standard Permit.

Table 1-1
Emission Summary
SpaceX Starlink Factory Bastrop

EPN	FIN	Facility Description	Authorization	Table	VOC		NO_x		CO		SO_2		PM	
					Proposed		Proposed		Proposed		Proposed		Proposed	
					lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CTG-1 through CTG-4	CTG-1 through CTG-4	Turbines 1 - 4	EGU Non-rule standard permit	A-1	16.10	65.77	20.81	91.48	13.64	55.70	19.82	17.36	14.80	64.82
CTG-1 through CTG-4	CTG-1 through CTG-4	Turbines SUSD	EGU Non-rule standard permit	A-2	16.10	0.81	140.15	7.01	85.24	4.26	19.82	0.99	14.80	0.74
Project Emissions (tpy)						***66.57***		***98.49***		***59.96***		***18.35***		***65.56***
PSD Threshold (tpy)						***250***		***250***		***250***		***250***		***250***
Site Existing Major Source (Yes/No)						***No***		***No***		***No***		***No***		***No***

Table 1-1
Emission Summary
SpaceX Starlink Factory Bastrop

EPN	FIN	Facility Description	Authorization	Table	PM_{10}		$PM_{2.5}$		H_2SO_4		HCHO		NH_3	
					Proposed		Proposed		Proposed		Proposed		Proposed	
					lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CTG-1 through CTG-4	CTG-1 through CTG-4	Turbines 1 - 4	EGU Non-rule standard permit	A-1	14.80	64.82	14.80	64.82	1.52	1.33	0.34	1.37	10.37	42.33
CTG-1 through CTG-4	CTG-1 through CTG-4	Turbines SUSD	EGU Non-rule standard permit	A-2	14.80	0.74	14.80	0.74	1.52	0.08	0.34	0.02		
Project Emissions (tpy)						***65.56***		***65.56***		***1.40***		***1.39***		***42.33***
PSD Threshold (tpy)						***250***		***250***		***-***		***-***		***-***
Site Existing Major Source (Yes/No)						***No***		***No***		***No***		***No***		***No***

2. ADMINISTRATIVE FORMS

The following TCEQ forms are included in this section:

- PI-1S, Registration of Air Standard Permit

In accordance with 30 TAC § 116.614, there is a flat fee of $900 to register a standard permit. Since expedited permit review is requested, an additional $500 surcharge applies as well. These fees have been paid online.

Form PI-1S
Registrations for Air Standard Permit
(Page 1)
Texas Commission on Environmental Quality

I.	**Registrant Information**
A.	Company or Other Legal Customer Name:
Space Exploration Technologies Corp.	
B.	Company Official Contact Information:
	☒ Mr.
	☐ Mrs.
	☐ Ms.
	☐ Other:_____
Name: Arturo Macedo	
Title: Lead Environmental Engineer	
Mailing Address: 858 FM 1209	
City: Bastrop	
State: TX	
ZIP Code: 78602	
Telephone Number: (512) 844-5187	
Fax Number:	
Email Address: Arturo.macedo@spacex.com	
All permit correspondence will be sent via email.	
C.	Technical Contact Information
	☒ Mr.
	☐ Mrs.
	☐ Ms.
	☐ Other:_____
Name: Arturo Macedo	
Title: Lead Environmental Engineer	
Company Name: Space Exploration Technologies Corp.	
Mailing Address: 858 FM 1209	
City: Bastrop	
State: TX	
ZIP Code: 78602	

Form PI-1S
Registrations for Air Standard Permit
(Page 2)
Texas Commission on Environmental Quality

I.	**Registrant Information *(continued)***
C.	Technical Contact Information *(continued)*
Telephone Number: (512) 844-5187	
Fax Number:	
Email Address: Arturo.macedo@spacex.com	
II.	**Facility and Site Information**
A.	Name and Type of Facility
Facility Name: Starlink Factory Bastrop	
Type of Facility: ☒ Permanent ☐ Temporary	
For portable units, please provide the serial number of the equipment being authorized below. Serial No(s):	
B.	Facility Location Information
Street Address: 858 FM 1209	
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).	
City: Bastrop	
County: Bastrop	
ZIP Code: 78602	
C.	Core Data Form (**required** for Standard Permits 6006, 6007, and 6013).
Is the Core Data Form (TCEQ Form 10400) attached? ☐ Yes ☒ No	
Customer Reference Number (CN): CN602867657	
Regulated Entity Number (RN): RN111897583	
D.	TCEQ Account Identification Number (if known):

Form PI-1S
Registrations for Air Standard Permit
(Page 3)
Texas Commission on Environmental Quality

II. Facility and Site Information *(continued)*
E. Type of Action ☒ Initial Application ☐ Change to Registration ☐ Renewal ☐ Renewal Certification
For Change to Registration, Renewal, or Renewal Certification actions provide the following:
Registration Number:
Expiration Date:
F. Standard Permit Claimed: Air Quality Standard Permit For Electric Generating Units 6005
G. Previous Standard Exemption or PBR Registration Number: N/A
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR? ☐ Yes ☒ No
If "Yes," enter previous standard exemption number(s) and PBR registration number(s) and associated effective date in the spaces provided below.
Standard Exemption Number(s):
PBR Registration Number(s):
H. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit? ☒ Yes ☐ No
If "Yes," enter standard exemption number(s), PBR registration number(s), Standard Permit Registration Number(s), and associated effective date in the spaces provided below.
Standard Exemption Number(s): N/A
PBR Registration Number(s): 176369 – 03/05/2026, 182188 – 03/05/2026, 183702 – 05/08/2026
Standard Permit Registration Number(s): N/A

Form PI-1S
Registrations for Air Standard Permit
(Page 4)
Texas Commission on Environmental Quality

II. Facility and Site Information *(continued)*
I. Other Air Preconstruction Permits
Are there any other air preconstruction permits at this site? ☐ Yes ☒ No
If "Yes," enter permit number(s) in the spaces provided below.
J. Affected Air Preconstruction Permits
Does the standard permit directly affect any permitted facility? ☐ Yes ☒ No
If "Yes," enter permit number(s) in the spaces provided below.
K. Federal Operating Permit (FOP) Requirements
Is this facility located at a site that is required to obtain a FOP pursuant to 30 TAC Chapter 122? ☐ Yes ☒ No ☐ To Be Determined
Check the requirements of 30 TAC Chapter 122 that will be triggered if this standard permit is approved (*check all that apply).* ☐ Initial Application for a FOP ☐ Significant Revision for a SOP ☐ Minor Revision for a SOP ☐ Operational Flexibility/Off Permit Notification for a SOP ☐ Revision for a GOP ☐ To be Determined ☒ None
Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)* ☐ SOP ☐ SOP application/revision (submitted or under APD review) ☐ GOP ☐ GOP application/revision (submitted or under APD review) ☒ N/A

Form PI-1S
Registrations for Air Standard Permit
(Page 5)
Texas Commission on Environmental Quality

III.	**Fee Information** ***(go to www.tceq.texas.gov/epay to pay online)***
A.	Fee Amount: $900
B.	Voucher number from ePay:
IV.	**Public Notice** ***(if applicable)***
A.	Responsible Person ☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other:_____
Name:	
Title:	
Company:	
Mailing Address:	
City:	
State:	
ZIP Code:	
Telephone No.:	
Fax No.:	
Email Address:	
B.	Technical Contact ☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other:_____
Name:	
Title:	
Company:	
Mailing Address:	
City:	
State:	
ZIP Code:	

Form PI-1S
Registrations for Air Standard Permit
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Texas Commission on Environmental Quality

IV. Public Notice *(if applicable)*
B. Technical Contact
Telephone Number:
Fax Number:
Email Address:
C. Bilingual Notice
Is a bilingual program required by the Texas Education Code in the School District? ☐ Yes ☐ No
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district? ☐ Yes ☐ No
If "Yes," list which language(s) are required by the bilingual program below? Language(s):_____ Language(s):_____
D. Small Business Classification and Alternate Public Notice
Does this company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts? ☐ Yes ☐ No
Is the site a major source under 30 TAC Chapter 122, Federal Operating Permit Program? ☐ Yes ☐ No
Are the site emissions of any individual regulated air contaminant equal to or greater than 50 tpy? ☐ Yes ☐ No
Are the site emissions of all regulated air contaminant combined equal to or greater than 75 tpy? ☐ Yes ☐ No

Form PI-1S
Registrations for Air Standard Permit
(Page 7)
Texas Commission on Environmental Quality

V.	Renewal Certification Option
A.	Does the permitted facility emit an air contaminant on the Air Pollutant Watch List, and is the permitted facility located in an area on the watch list? ☐ Yes ☐ No
B.	For facilities participating in the Houston/Galveston/Brazoria area (HGB) cap and trade program for highly reactive VOCs (HRVOCs), do the HRVOCs need to be speciated on the maximum allowable emission rates table (MAERT)? ☐ Yes ☐ No
C.	Does the company and/or site have an unsatisfactory compliance history? ☐ Yes ☐ No
D.	Are there any applications currently under review for this standard permit registration? ☐ Yes ☐ No
E.	Are scheduled maintenance, startup, or shutdown emissions required to be included in the standard permit registration at this time? ☐ Yes ☐ No
F.	Are any of the following actions being requested at the time of renewal: ☐ Yes ☐ No
1.	Are there any facilities that have been permanently shut down that are proposed to be removed from the standard permit registration? ☐ Yes ☐ No
2.	Do changes need to be made to the standard permit registration in order to remain in compliance? ☐ Yes ☐ No
3.	Are sources or facilities that have always been present and represented, but never identified in the standard permit registration, proposed to be included with this renewal? ☐ Yes ☐ No
4.	Are there any changes to the current emission rates table being proposed? ☐ Yes ☐ No
*Note: If answers to all of the questions in Section V. Renewal Certification Option are "No," use the certification option and skip to Section VII. of this form. If the answers to any of the questions in Section V. Renewal Certification Option are "Yes," the certification option **cannot** be used.*	
*If notice is applicable and comments are received in response to the public notice, the application does not qualify for the renewal certification option.	

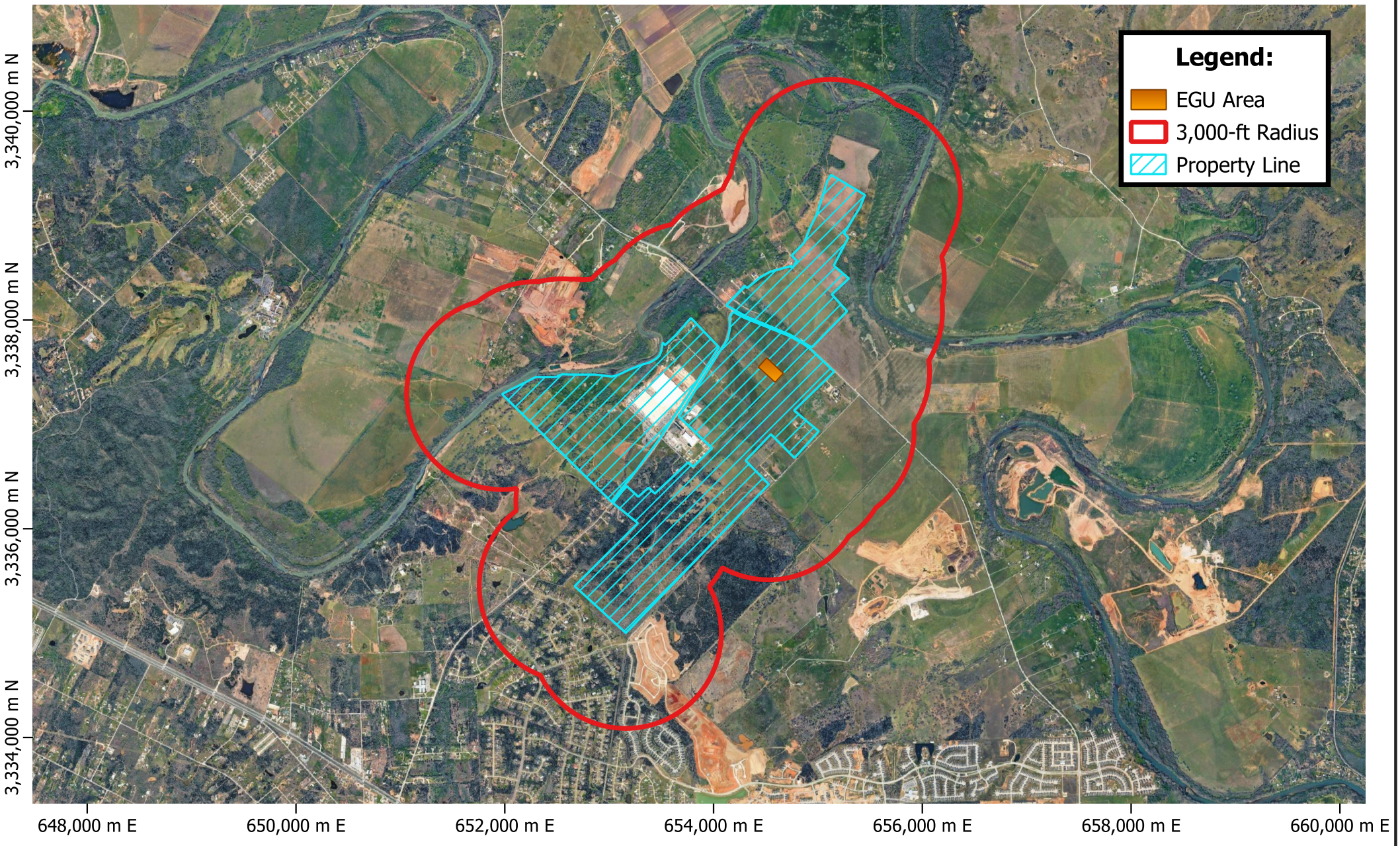
Form PI-1S
Registrations for Air Standard Permit
(Page8)
Texas Commission on Environmental Quality

VI. Technical Information Including State and Federal Regulatory Requirements
Place a check next to the appropriate box to indicate what you have included in your submittal. *Note: Any technical or essential information needed to confirm that facilities are meeting the requirements of the standard permit must be provided. Not providing key information could result in an automatic deficiency and voiding of the projec*t.
A. Standard Permit requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)
Did you demonstrate that the general requirements in 30 TAC§§116.610 and 116.615 are met? ☒ Yes ☐ No
Did you demonstrate that the individual requirements of the specific standard permit are met? ☒ Yes ☐ No
B. Confidential Information (All pages properly marked “CONFIDENTIAL”). ☐ Yes ☒ No
C. Process Flow Diagram. ☒ Yes ☐ No
D. Process Description. ☒ Yes ☐ No
E. Maximum Emissions Data and Calculations. ☒ Yes ☐ No
F. Plot Plan. ☐ Yes ☒ No
G. Projected Start of Construction Date, Start of Operation Date, and Length of Time at Site: ☒ Yes ☐ No
Projected Start of Construction (provide date): TBD
Projected Start of Operation (provide date): TBD
Length of Time at the Site: Permanent

VII. Delinquent Fees and Penalties
This form **will not be processed** until all delinquent fees and/or penalties owed to TCEQ or the Office of the Attorney General on behalf of TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ website at: www.tceq.texas.gov/agency/financial/fees/delin/index.html
VIII. Signature Requirements
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code (THSC), Chapter 382, the Texas Clean Air Act (TCAA) the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.
Name (printed): Arturo Macedo
Signature (original signature required):
IX. Copies of the Registration
The Form PI-1S application must be submitted through ePermits. No additional copies need to be sent to the Regional Office or local Air Pollution Control Program(s). The link to ePermits can be found here: www3.tceq.texas.gov/steers/.

3. PROJECT LOCATION

The Starlink Bastrop Facility is located in Bastrop, Bastrop County, Texas, 78602. The driving directions to the property can be found in the PI-1S provided in Section 2. An area map is provided in Figure 3-1.



SpaceX, Bastrop County
NAD83, ZONE 14

0 0.5 1 1.5 2 mi

Trinity Consultants

4. PROCESS DESCRIPTION

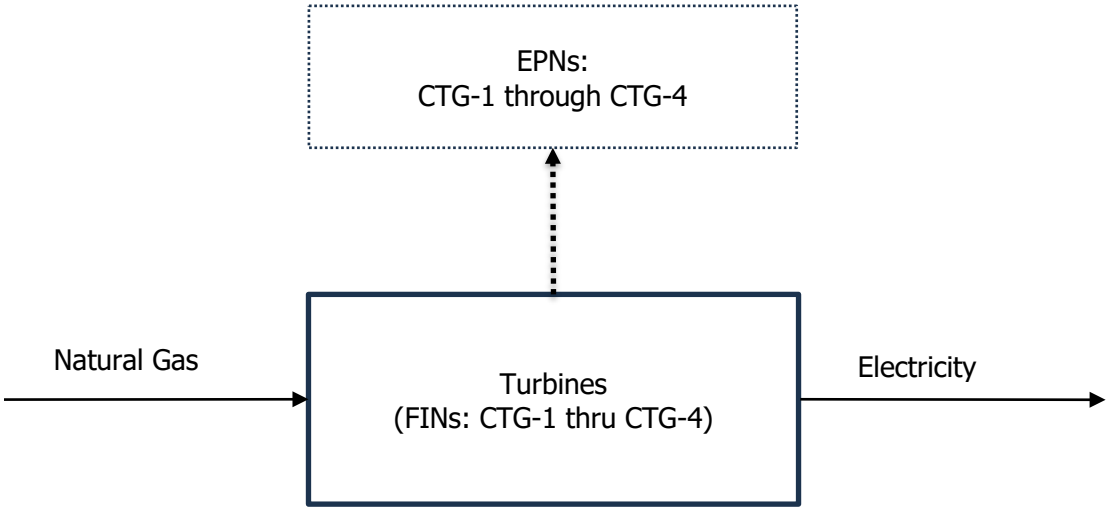
4.1 Combustion Turbines

The proposed project will consist of a total of four (4) GE Vernova LM2500 natural gas-fired combustion turbine generators (CTGs). Each turbine will be nominally rated at 37.16 megawatts (MW) of electrical power. The turbines will produce up to roughly 149 MW of electric power.

The main function of the CTGs is to provide shaft power to drive an electric generator. Combustion air and natural gas is fed to each combustor producing a high-velocity combustion discharge that impinges on the turbine blades to rotate the turbine shaft. The turbine shaft speed is monitored and used to control the fuel flow to the turbine. In turn, the fuel flow defines the turbine operating conditions. The fuel-to-air ratio is controlled by the physical dimensions of the combustor. Therefore, as the fuel demand changes, the combustion air flow changes accordingly.

Products of combustion emissions including nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), and sulfur dioxide (SO_2) are formed through fuel combustion. Emissions of NOx from the turbines will be reduced using Dry Low Emission (DLE) combustion control systems.

Figure 4-1: Process Flow Diagram



5. EMISSION CALCULATION METHODOLOGY

The following describes the calculation methodologies utilized to determine the emission rates from each facility included in this application. Detailed emission calculations are provided in Appendix A.

5.1 Turbines

Routine emissions from turbines are derived based on vendor-provided pollutant concentrations under representative operating conditions. Annual emissions are calculated based on 4 turbines operating simultaneously at 8,760 hours per year.

Routine emissions of CO, VOC, and annual NO_X are calculated using concentration limits provided by the vendor. The concentration limits are given as parts per million by volume dry (ppmvd), corrected to 15% oxygen (O_2). Short-term NO_X emissions are calculated based on the applicable EGU standard permit emission limitation of 0.14 lb/MW-hr. Annual NO_X emissions are calculated using a maximum concentration of 4 ppmv at 15% O_2. CO emissions are calculated using a maximum concentration of 4 ppmv at 15% O_2. HCHO will have an emission factor of 0.091 ppmv. VOC will have an emission factor of 3 ppmv. $PM/PM_{10}/PM_{2.5}$ emissions are based on 3.70 lb/hr provided by the vendor.

SO_2 emissions are calculated based on natural gas sulfur fuel content of 5 and 1 grain (gr) per 100 standard cubic feet (scf) on an hourly and annual basis. Formation of sulfuric acid (H_2SO_4) is anticipated to be negligible but is conservatively quantified, assuming 5% conversion of SO_2 to SO_3 and 100% conversion of SO_3 to sulfuric acid mist.

NOx and CO startup and shutdown (SUSD) emissions from each gas turbine are based on outlet concentrations of 25 ppmv for each pollutant at full load, consistent with turbines of the same make and model. Particulate, VOC, HCHO, SO_2 and H_2SO_4 emissions are not expected to be different during SUSD operations as they are driven by fuel quality and good combustion practices. Annual SUSD emissions are calculated based on SUSD operation of 4 turbines operating a total of 400 hours per year.

6. FEDERAL NEW SOURCE REVIEW

Federal Prevention of Significant Deterioration (PSD) and/or Nonattainment New Source Review (NNSR) permitting requirements apply to construction of a new major stationary source or modification of an existing major source that results in a significant net increase in emissions of a regulated air pollutant. The site is located in Bastrop County, which is classified as attainment or unclassified for all criteria pollutants. Therefore, NNSR review does not apply to this site.

The site currently does not meet the definition of a major stationary source of any criteria pollutant category. As shown below, the proposed project increases for all PSD program pollutants are less than the PSD major source threshold; therefore, the project is not subject to PSD permitting requirements. PSD review is not required for greenhouse gas (GHG) emissions because the project does not trigger PSD review for any other regulated pollutants.

Table 6-1. PSD Applicability Summary

Pollutant	Project Increase (tpy)	Major Threshold (tpy)	Federal Review Required (Yes/No)
NOx	**98.49**	250	No
CO	**59.96**	250	No
VOC	**66.57**	250	No
PM	**65.56**	250	No
PM_{10}	**65.56**	250	No
$PM_{2.5}$	**65.56**	250	No
SO_2	**18.35**	250	No

7. RULE APPLICABILITY ANALYSIS

This section addresses the applicability and general conditions of a Standard Permit.

7.1 30 Texas Administrative Code (TAC) 116 Subchapter F

7.1.1 30 TAC 116.610 (Applicability)

(a) Under the Texas Clean Air Act, §382.051, a project that meets the requirements for a standard permit listed in this subchapter or issued by the commission is hereby entitled to the standard permit, provided the following conditions listed in this section are met. For the purposes of this subchapter, project means the construction or modification of a facility or a group of facilities submitted under the same registration.

(1) Any project that results in a net increase in emissions of air contaminants from the project other than water, nitrogen, ethane, hydrogen, oxygen, or greenhouse gases (GHGs) as defined in §101.1 of this title (relating to Definitions), or those for which a national ambient air quality standard has been established must meet the emission limitations of §106.261 of this title (relating to Facilities (Emission Limitations)), unless otherwise specified by a particular standard permit.

Paragraph (3)(A) of the EGU Standard Permit (SP) states that "units which meet the conditions of this standard permit do not have to meet 30 TAC §116.610(a)(1), Applicability". This project will meet all the conditions of the EGU SP; therefore, a compliance demonstration with 30 TAC §106.261 is not required or included as part of this registration.

(2) Construction or operation of the project must be commenced prior to the effective date of a revision to this subchapter under which the project would no longer meet the requirements for a standard permit.

The project will meet the requirements of the standard permit in effect at the time of the construction or operation.

(3) The proposed project must comply with the applicable provisions of the Federal Clean Air Act (FCAA), §111 (concerning New Source Performance Standards) as listed under 40 Code of Federal Regulations (CFR) Part 60, promulgated by the United States Environmental Protection Agency (EPA).

The Starlink Factory Bastrop will comply with all applicable provisions of 40 CFR Part 60.

(4) The proposed project must comply with the applicable provisions of FCAA, §112 (concerning Hazardous Air Pollutants) as listed under 40 CFR Part 61, promulgated by the EPA.

The proposed sources will not be subject to National Emissions Standards for Hazardous Air Pollutants (NESHAP) Subparts as listed in 40 CFR Part 61.

(5) The proposed project must comply with the applicable maximum achievable control technology standards as listed under 40 CFR Part 63, promulgated by the EPA under FCAA, §112 or as listed under Chapter 113, Subchapter C of this title (relating to National Emissions Standards for Hazardous Air Pollutants for Source Categories (FCAA, §112, 40 CFR Part 63)).

The Starlink Factory Bastrop will comply with all applicable provisions of 40 CFR Part 63.

(6) If subject to Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program) the proposed facility, group of facilities, or account must obtain allocations to operate.

Bastrop County is not regulated under the Mass Emissions Cap and Trade (MECT) program. Therefore, this paragraph does not apply to this site.

(b) Any project that constitutes a new major stationary source or major modification as defined in §116.12 of this title (relating to Nonattainment and Prevention of Significant Deterioration Review Definitions) because of emissions of air contaminants other than greenhouse gases is subject to the requirements of §116.110 of this title (relating to Applicability) rather than this subchapter.

Notwithstanding any provision in any specific standard permit to the contrary, any project that constitutes a new major stationary source or major modification which is subject to Subchapter B, Division 6 of this chapter (relating to Prevention of Significant Deterioration Review) due solely to emissions of greenhouse gases may use a standard permit under this chapter for air contaminants that are not greenhouse gases.

As documented in Section 6, the proposed project does not constitute a new major source or major modification.

(c) Persons may not circumvent by artificial limitations the requirements of §116.110 of this title.

The Starlink Factory Bastrop will not circumvent by artificial limitations the requirements of §116.110.

(d) Any project involving a proposed affected source (as defined in §116.15(1) of this title (relating to Section 112(g) Definitions)) shall comply with all applicable requirements under Subchapter E of this chapter (relating to Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources (FCAA, §112(g), 40 CFR Part 63)). Affected sources subject to Subchapter E of this chapter may use a standard permit under this subchapter only if the terms and conditions of the specific standard permit meet the requirements of Subchapter E of this chapter.

The Starlink Factory Bastrop is not an affected source subject to the requirements of FCAA 112(g).

7.1.2 30 TAC 116.615 (General Conditions)

The following general conditions are applicable to holders of standard permits but will not necessarily be specifically stated within the standard permit document.

(1) Protection of public health and welfare. The emissions from the facility, including dockside vessel emissions, must comply with all applicable rules and regulations of the commission adopted under Texas Health and Safety Code, Chapter 382, and with the intent of the Texas Clean Air Act (TCAA), including protection of health and property of the public.

All emissions related to this project will comply with all applicable rules and regulations, including protection of health and property of the public.

(2) Standard permit representations. All representations with regard to construction plans, operating procedures, pollution control methods, and maximum emission rates in any registration for a standard permit become conditions upon which the facility or changes thereto, must be constructed and operated. It is unlawful for any person to vary from such representations if the change will affect that person's right to claim a standard permit under this section. Any change in condition such that a person is no longer eligible to claim a standard permit under this section requires proper authorization

under §116.110 of this title (relating to Applicability). Any changes in representations are subject to the following requirements:

(A) For the addition of a new facility, the owner or operator shall submit a new registration incorporating existing facilities with a fee, in accordance with §116.611 and §116.614 of this title, (relating to Registration to use a Standard Permit and Standard Permit Fees) prior to commencing construction. If the applicable standard permit requires public notice, construction of the new facility or facilities may not commence until the new registration has been issued by the executive director.
(B) For any change in the method of control of emissions, a change in the character of the emissions, or an increase in the discharge of the various emissions, the owner or operator shall submit written notification to the executive director describing the change(s), along with the designated fee, no later than 30 days after the change.
(C) For any other change to the representations, the owner or operator shall submit written notification to the executive director describing the change(s) no later than 30 days after the change.
(D) Any facility registered under a standard permit which contains conditions or procedures for addressing changes to the registered facility which differ from subparagraphs (A) - (C) of this paragraph shall comply with the applicable requirements of the standard permit in place of subparagraphs (A) - (C) of this paragraph.

The Starlink Factory Bastrop will operate the proposed electric generating units as represented in this application and will notify the TCEQ within 30 days of any change in the method of control of emissions, a change in the character of the emissions, or an increase in the discharge of the various emissions as compared to the representations in this registration.

(3) Standard permit in lieu of permit amendment. All changes authorized by standard permit to a facility previously permitted under §116.110 of this title shall be administratively incorporated into that facility's permit at such time as the permit is amended or renewed.

This is an initial authorization; there currently is no existing authorization under 30 TAC 116.110 at this site.

(4) Construction progress. Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office not later than 15 working days after occurrence of the event, except where a different time period is specified for a particular standard permit.

The Starlink Factory Bastrop will comply with this provision.

(5) Start-up notification.

(A) The appropriate air program regional office of the commission and any other air pollution control agency having jurisdiction shall be notified prior to the commencement of operations of the facilities authorized by a standard permit in such a manner that a representative of the executive director may be present.
(B) For phased construction, which may involve a series of units commencing operations at different times, the owner or operator of the facility shall provide separate notification for the commencement of operations for each unit.
(C) Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting, Remediation, and Registration, the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).

(D) A particular standard permit may modify start-up notification requirements.

The Starlink Factory Bastrop will comply with this provision.

(6) Sampling requirements. If sampling of stacks or process vents is required, the standard permit holder shall contact the commission's appropriate regional office and any other air pollution control agency having jurisdiction prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The standard permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant.

The Starlink Factory Bastrop will contact the Office of Air Quality if sampling is required, in order to obtain the proper data forms and procedures before sampling is performed.

(7) Equivalency of methods. The standard permit holder shall demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the standard permit. Alternative methods must be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the standard permit.

The Starlink Factory Bastrop will comply with this provision.

(8) Recordkeeping. A copy of the standard permit along with information and data sufficient to demonstrate applicability of and compliance with the standard permit shall be maintained in a file at the plant site and made available at the request of representatives of the executive director, the United States Environmental Protection Agency, or any air pollution control agency having jurisdiction. For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the standard permit holder in the standard permit registration. This information must include, but is not limited to, production records and operating hours. Additional recordkeeping requirements may be specified in the conditions of the standard permit. Information and data sufficient to demonstrate applicability of and compliance with the standard permit must be retained for at least two years following the date that the information or data is obtained. The copy of the standard permit must be maintained as a permanent record.

The Starlink Factory Bastrop will maintain a copy of the standard permit with any other data and information required by the TCEQ to demonstrate compliance with the conditions of the standard permit for at least two years after the data is obtained. This information will be provided upon request to representatives of the TCEQ and any federal or local air pollution control program having jurisdiction.

(9) Maintenance of emission control. The facilities covered by the standard permit may not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. Notification for emissions events and scheduled maintenance shall be made in accordance with §101.201 and §101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements).

The electric generating units will be maintained in good working order and operated properly during normal operations. TCEQ will be notified of any emissions events and scheduled maintenance consistent with the requirements of §101.201 and §101.211.

(10) Compliance with rules. Registration of a standard permit by a standard permit applicant constitutes an acknowledgment and agreement that the holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the claiming of

the standard permit. If more than one state or federal rule or regulation or permit condition are applicable, the most stringent limit or condition shall govern. Acceptance includes consent to the entrance of commission employees and designated representatives of any air pollution control agency having jurisdiction into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the standard permit.

As discussed in this section and in Section 7.2, the project sources will comply with all applicable rules and regulations of the TCEQ and with all conditions of this standard permit.

(11) Distance limitations, setbacks, and buffer zones. Notwithstanding any requirement in any standard permit, if a standard permit for a facility requires a distance, setback, or buffer from other property or structures as a condition of the permit, the determination of whether the distance, setback, or buffer is satisfied shall be made on the basis of conditions existing at the earlier of:

(A) the date new construction, expansion, or modification of a facility begins; or
(B) the date any application or notice of intent is first filed with the commission to obtain approval for the construction or operation of the facility.

The standard permit claimed does not include a distance, setback, or buffer requirement.

7.2 Air Quality Standard Permit for Electric Generating Units

(Effective Date: May 16, 2007)

(1) Applicability

(A) This standard permit may be used to authorize electric generating units installed or modified after the effective date of this standard permit and that meet the requirements of this standard permit.

This Standard Permit is being used to authorize electric generating units after the effective date of the standard permit. The project meets the requirements of the Standard Permit as described in this document.

(B) This standard permit may not be used to authorize boilers. Boilers may be authorized under the Air Quality Standard Permit for Boilers; 30 TAC § 106.183, Boilers, Heaters, and Other Combustion Devices; or a permit issued under the requirements of 30 TAC Chapter 116.

No boilers are proposed to be authorized as part of this registration.

(2) Definitions

(A) East Texas Region - All counties traversed by or east of Interstate Highway 35 or Interstate Highway 37, including Bosque, Coryell, Hood, Parker, Somervell and Wise Counties.
(B) Installed - a generating unit is installed on the site when it begins generating electricity.
(C) West Texas Region - Includes all of the state not contained in the East Texas Region.
(D) Renewable fuel - fuel produced or derived from animal or plant products, byproducts or wastes, or other renewable biomass sources, excluding fossil fuels. Renewable fuels may include, but are not limited to, ethanol, biodiesel, and biogas fuels.

The above definitions have been acknowledged and applied in this document. The site location meets the definition of the East Texas Region and is therefore subject to the EGU SP emission limits pertaining to the East Texas Region.

(3) Administrative Requirements

(A) Electric generating units shall be registered in accordance with 30 TAC § 116.611, Registration to Use a Standard Permit, using a current Form PI-1S. Units that meet the conditions of this standard permit do not have to meet 30 TAC § 116.610(a)(1), Applicability.

This application, including Form PI-1S, is being submitted to register the proposed electric generating units under the EGU Standard Permit. Compliance with the requirements of § 116.611 is detailed in Section 7.1.1.

(B) Registration applications shall comply with 30 TAC § 116.614, Standard Permit Fees, for any single unit or multiple units at a site with a total generating capacity of 1 megawatt (MW) or greater. The fee for units or multiple units with a total generating capacity of less than 1 MW at a site shall be $100.00. The fee shall be waived for units or multiple units with a total generating capacity of less than 1 MW at a site that have certified nitrogen oxides (NOx) emissions that are less than 10 percent of the standards required by this standard permit.

This application is being submitted with the standard $900 fee per § 116.614. The project does not qualify for a reduced fee based on the proposed generating capacity.

(C) No owner or operator of an electric generating unit shall begin construction and/or operation without first obtaining written approval from the executive director.

The Starlink Factory Bastrop acknowledges that construction and operation may not begin prior to receiving written approval from TCEQ.

(D) Records shall be maintained and provided upon request to the Texas Commission on Environmental Quality (TCEQ) for the following:

(i) Hours of operation of the unit;
(ii) Maintenance records, maintenance schedules, and/or testing reports for the unit to document re-certification of emission rates as required by subsection (4)(G) below; and
(iii) Records to document compliance with the fuel sulfur limits in subsection (4)(C).

The Starlink Factory Bastrop will maintain records necessary to demonstrate compliance with the Standard Permit, including the specific records identified above.

(E) Electric generators powered by gas turbines must meet the applicable conditions, including testing and performance standards, of Title 40 Code of Federal Regulations (CFR) Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, and applicable requirements of 40 CFR Part 60 Subpart KKKK, Standards of Performance for Stationary Combustion Turbines.

The Starlink Factory Bastrop will comply with the requirements of 40 CFR 60 (NSPS) Subpart KKKKa. Per §60.4305(a), turbines regulated under Subpart KKKKa are exempt from the requirements of Subpart GG or KKKK.

(F) Compliance with this standard permit does not exempt the owner or operator from complying with any applicable requirements of 30 TAC Chapter 117, Control of Air Pollution from Nitrogen Compounds, or 30 TAC Chapter 114, Control of Air Pollution from Motor Vehicles.

Bastrop County is not subject to the requirements of Chapter 117, including Subchapters D or E. Facilities included in this application are not subject to requirements of 30 TAC Chapter 114 for motor vehicles.

(4) General Requirements

(A) Emissions of NOx from the electric generating units shall be certified by the manufacturer or by the owner or operator in pounds of pollutant per megawatt hour (lb/MWh). This certification must be displayed on the name plate of the unit or on a label attached to the unit. Test results from U.S. Environmental Protection Agency (EPA) reference methods, California Air Resources Board methods, or equivalent alternative testing methods approved by the executive director used to verify this certification shall be provided upon request to the TCEQ. The unit must operate on the same fuel(s) for which the unit was certified.

The Starlink Factory Bastrop will comply with this provision.

(B) Electric generating units that use combined heat and power (CHP) may take credit for the heat recovered from the exhaust of the combustion unit to meet the emission standards in subsections (4)(D), (4)(E), and (4)(F). Credit shall be at the rate of one MWh for each 3.4 million British Thermal Units of heat recovered. The following requirements must be met to take credit for CHP for units not sold and certified as an integrated package by the manufacturer:

(i) The owner or operator must provide as part of the application documentation of the heat recovered, electric output, efficiency of the generator alone, efficiency of the generator including CHP, and the use for the non-electric output, and

(ii) The heat recovered must equal at least 20 percent of the total energy output of the CHP unit.

This application is not seeking to take credit for CHP to meet the emission standard in Subsection (4)(E).

(C) Fuels combusted in these electric generating units are limited to:

(i) Natural gas containing no more than ten grains total sulfur per 100 dry standard cubic feet;

(ii) Landfill gas, digester gas, stranded oilfield gas, or gaseous renewable fuel containing no more than 30 grains total sulfur per 100 dry standard cubic feet; or

(iii) Liquid fuels (including liquid renewable fuel) not containing waste oils or solvents and containing less than 0.05 percent by weight sulfur.

The proposed project involves the use of natural gas fuel meeting item (i).

(D) Except as provided in subsections (4)(F) and (4)(H), NOx emissions for units 10 MW or less shall meet the following limitations based upon the date the unit is installed and the region in which it operates:

East Texas Region:

(i) Units installed prior to January 1, 2005 and
   a. operating more than 300 hours per year - 0.47 lb/MWh;
   b. operating 300 hours or less per year - 1.65 lb/MWh;

(ii) Units installed on or after January 1, 2005 and
   a. operating more than 300 hours per year, with a capacity greater than 250 kilowatts (kW) - 0.14 lb/MWh;
   b. operating 300 hours or less per year - 0.47 lb/MWh; or
   c. any unit with a capacity of 250 kW or less - 0.47 lb/MWh.

West Texas Region:

(i) Units operating more than 300 hours per year - 3.11 lb/MWh;

(ii) Units operating 300 hours or less per year - 21 lb/MWh. Units certified to comply with applicable Tier 1, 2, or 3 emission standards in 40 CFR Part 89, Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines, are deemed to satisfy this emission limit.

The Starlink Factory Bastrop is not proposing the authorization of any units 10 MW or less with this application. Therefore, this paragraph does not apply.

(E) Except as provided in subsections (4)(F) and (4)(H), NOx emissions for units greater than 10 MW shall meet the following limitations:

(i) Units operating more than 300 hours per year - 0.14 lb/MWh;
(ii) Units operating 300 hours or less per year - 0.38 lb/MWh.

Turbines in this permit registration are greater than 10 MW and will operate more than 300 hours per year. Therefore, the NOx emission standard of 0.14 lb/MWh applies. Selective Catalytic Reduction (SCR) control technology will be used to meet the applicable NOx limitation referenced in this section.

(F) Electric generating units firing any gaseous or liquid fuel that is at least 75 percent landfill gas, digester gas, stranded oil field gas, or renewable fuel content by volume, shall meet a NOx emission limit of 1.90 lb/MWh. Units in West Texas with a capacity of 10 MW or less that fire at least 75 percent landfill gas, digester gas, stranded oilfield gases, or gaseous or liquid renewable fuel by volume, must comply with the applicable West Texas NOx limit in subsection (4)(D).

The proposed units will not fire gaseous or liquid fuel containing landfill gas, digester gas, stranded oil field gas, or renewable fuel; therefore, this provision is not applicable.

(G) To ensure continuing compliance with the emissions limitations, the owner or operator shall re-certify a unit every 16,000 hours of operation, but no less frequently than every three years. Re-certification may be accomplished by following a maintenance schedule that the manufacturer certifies will ensure continued compliance with the required NOx standard or by third party testing of the unit using appropriate EPA reference methods, California Air Resources Board methods, or equivalent alternative testing methods approved by the executive director to demonstrate that the unit still meets the required emission standards. After re-certification, the unit must operate on the same fuel(s) for which the unit was re-certified.

The Starlink Factory Bastrop will comply with this provision.

(H) The NOx emission limits in subsections (4)(D)-(4)(F) are subject to the following exceptions:

(i) The hourly NOx emission limits do not apply at times when the ambient air temperature at the location of the unit is less than 0 degrees Fahrenheit.
(ii) At times when a unit is operating at less than 80% of rated load, an alternative NOx emission standard for that unit may be determined by multiplying the applicable emission standard in subsections (4)(D)-(4)(F) by the rated load of the EGU (in MW), to produce an allowable hourly mass NOx emission rate. In order to use this alternative standard, an owner or operator must maintain records that demonstrate compliance with the alternative emission standard, and make such records available to the TCEQ or any local air pollution control agency with jurisdiction upon request.

If use of this alternate standard is required, records will be maintained to demonstrate the mass emissions limitation, referenced in this paragraph, will not be exceeded. Any records maintained will be made available to TCEQ upon request.

APPENDIX A. EMISSION CALCULATIONS

Table A-1
Turbine Emissions Calculations
SpaceX Starlink Factory Bastrop

Turbine Parameters		
Gas Turbine Performance	**Unit**	
Fuel		Natural Gas
Load	%	100%
F-Factor (Method 19, Table 19-2)	dscf/MMBtu	8,710
Ideal Gas Law (Standard Condition) - Annual	at 68F and 14.7 psia	385
Ideal Gas Law (Cold Days) - Short-Term	at 32F and 14.7 psia	359
Number of Turbines Operating	#	4
Site-Wide Annual Operating Hours (4 Turbines)	Hrs/yr	35,040
Nominal Net CT power output (1 Turbine)	kW	37156.1
Nominal Net CT power output (1 Turbine)	MW	37.16
Nominal Net CT power output (4 Turbines)	kW	148,624
Nominal Net CT power output (4 Turbines)	MW	148.6244
HHV/LHV	Ratio	1.10
Nominal Net heat rate	BTU/kWh (LHV)	8,663
Adjusted net heat rate	BTU/kWh (HHV)	9,529
Heat consumption per Turbine	MMBtu/hr (LHV)	321.9
Heat consumption per Turbine	MMBtu/hr (HHV)	354.1

Emission Factors		
Pollutant	**Unit**	**Value**
NOx (Short-Term)	lb/MW-hr	0.14
NOx (Long-Term)	ppmvd@ 15% O_2	4.00
NOx (Long-Term)	lb/MMBtu	0.015
CO (Short-Term)	ppmvd@ 15% O_2	4.00
CO (Short-Term)	lb/MMBtu	0.010
CO (Long-Term)	ppmvd@ 15% O_2	4.00
CO (Long-Term)	lb/MMBtu	0.009
VOC (Short-Term), as propane	ppmvd@ 15% O_2	3.00
VOC (Short-Term), as propane	lb/MMBtu	0.011
VOC (Long-Term), as propane	ppmvd@ 15% O_2	3.00
VOC (Long-Term), as propane	lb/MMBtu	0.011
HCHO (Short-Term)	ppmvd@ 15% O_2	0.091
HCHO (Short-Term)	lb/MMBtu	0.00024
HCHO (Long-Term)	ppmvd@ 15% O2	0.091
HCHO (Long-Term)	lb/MMBtu	0.00022
$PM/PM_{10}/PM_{2.5}$	lb/hr	3.70
NH_3 (Short-Term)	ppmvd@ 15% O_2	5.00
NH_3 (Short-Term)	lb/MMBtu	0.007
NH_3 (Long-Term)	ppmvd@ 15% O_2	5.00
NH_3 (Long-Term)	lb/MMBtu	0.007
SO_2 (Short-Term)	grains/100 scf	5.00
SO_2 (Long-Term)	grains/100 scf	1.00
H_2SO_4	% sulfur converted	5%

Table A-1
Turbine Emissions Calculations
SpaceX Starlink Factory Bastrop

Combined Emissions		
Pollutant	**Unit**	**Total Emission Rates**
NO_X (hourly) 1 Turbine	lb/hr	5.20
NO_X (hourly) 4 Turbines	lb/hr	20.81
NO_X (annual) 4 Turbines	tpy	91.48
CO (hourly) 1 Turbine	lb/hr	3.41
CO (hourly) 4 Turbines	lb/hr	13.64
CO (annual) 4 Turbines	tpy	55.70
VOC (hourly) 1 Turbine	lb/hr	4.03
VOC (hourly) 4 Turbines	lb/hr	16.10
VOC (annual) 4 Turbines	tpy	65.77
HCHO (hourly) 1 Turbine	lb/hr	0.08
HCHO (hourly) 4 Turbines	lb/hr	0.34
HCHO (annual) 4 Turbines	tpy	1.37
$PM/PM_{10}/PM_{2.5}$ (hourly) 1 Turbine	lb/hr	3.70
$PM/PM_{10}/PM_{2.5}$ (hourly) 4 Turbines	lb/hr	14.80
$PM/PM_{10}/PM_{2.5}$ (hourly) 4 Turbines	tpy	64.82
NH_3 (hourly) 1 Turbine	lb/hr	2.59
NH_3 (hourly) 4 Turbines	lb/hr	10.37
NH_3 (annual) 4 Turbines	tpy	42.33
SO_2 (hourly) 1 Turbine	lb/hr	4.96
SO_2 (hourly) 4 Turbines	lb/hr	19.82
SO_2 (annual) 4 Turbines	tpy	17.36
H_2SO_4 (hourly) 1 Turbine	lb/hr	0.38
H_2SO_4 (hourly) 4 Turbines	lb/hr	1.52
H_2SO_4 (annual) 4 Turbines	tpy	1.33

Note:
1. Emission factors of NO_X, CO, VOC, $PM/PM_{10}/PM_{2.5}$ are provided by vendor.

Sample Conversion Calculation from ppmvd@ 15% O2 to lb/MMBtu for CO (annual)

$$\frac{4\ \text{ppmvd@ 15\% O2}}{} \times \frac{8710\ \text{dscf}}{\text{MMBtu}} \times \frac{1\ \text{lb-mol}}{385\ \text{scf}} \times \frac{20.9}{20.9\text{-}15\ \%\ \text{O2}} \times \frac{28\ \text{lb}}{\text{lb-mol}} \times \frac{1\ \text{MMBtu}}{1000000\ \text{Btu}} = 0.009\ \text{lb/MMBtu}$$

Example emission calculations for all Turbines:

1 Hourly Emissions (lb/hr) = EGU SP NOx Emission Factor Limit (lb/MW-hr) * Nominal Net CT Power Output (MW) * 4 Turbines

$$\text{Hourly Emissions of NOx (lb/hr)} = \frac{0.14\ \text{lb}}{\text{MW-hr}} \times 37.16\ \text{MW} \times 4\ \text{Turbines} = 20.81\ \text{lb/hr}$$

2 Annual Emissions (tpy) = Emission Factor (lb/MMBtu) * Heat Consumption per turbine (MMBtu/hr) * Site-Wide Annual Hours (hours/year) / 2,000 (lb/ton)

$$\text{Annual Emissions of NOx (tpy)} = \frac{0.01\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times \frac{35{,}040\ \text{hr}}{\text{year}} \times \frac{\text{ton}}{2{,}000\ \text{lb}} = 91.48\ \text{tpy}$$

Table A-1
Turbine Emissions Calculations
SpaceX Starlink Factory Bastrop

3 Hourly Emissions (lb/hr) = Calculated Short-Term Emission Factor (lb/MMBtu) * Heat Consumption HHV (MMBtu/hr) * 4 Turbines

$$\text{Hourly Emissions of CO (lb/hr)} = \frac{0.01\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times 4\ \text{Turbines} = 13.64\ \text{lb/hr}$$

4 Annual Emissions (tpy) = Emission Factor (lb/MMBtu) * Heat Consumption per turbine (MMBtu/hr) * Site-Wide Annual Hours (hours/year) / 2,000 (lb/ton)

$$\text{Annual Emissions of CO (tpy)} = \frac{0.01\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times \frac{35{,}040\ \text{hr}}{\text{year}} \times \frac{\text{ton}}{2{,}000\ \text{lb}} = 55.70\ \text{tpy}$$

5 Hourly Emissions (lb/hr) = Calculated Short-Term Emission Factor (lb/MMBtu) * Heat Consumption HHV (MMBtu/hr) * 4 Turbines

$$\text{Hourly Emissions of VOC (lb/hr)} = \frac{0.011\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times 4\ \text{Turbines} = 16.10\ \text{lb/hr}$$

6 Annual Emissions (tpy) = Emission Factor (lb/MMBtu) * Heat Consumption per turbine (MMBtu/hr) * Site-Wide Annual Hours (hours/year) / 2,000 (lb/ton)

$$\text{Annual Emissions of VOC (tpy)} = \frac{0.011\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times \frac{35{,}040\ \text{hr}}{\text{year}} \times \frac{\text{ton}}{2{,}000\ \text{lb}} = 65.77\ \text{tpy}$$

7 Hourly Emissions (lb/hr) = Calculated Short-Term Emission Factor (lb/MMBtu) * Heat Consumption HHV (MMBtu/hr) * 4 Turbines

$$\text{Hourly Emissions of HCHO (lb/hr)} = \frac{0.00024\ \text{lb}}{\text{MMBtu}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times 4\ \text{Turbines} = 0.34\ \text{lb/hr}$$

8 Annual Emissions (tpy) = Emission Factor (lb/MMBtu) * Heat Consumption per turbine (MMBtu/hr) * Site-Wide Annual Hours (hours/year) / 2,000 (lb/ton)

$$\text{Annual Emissions of HCHO (tpy)} = \frac{0.0002\ \text{lb}}{\text{MMBtu}} \times \frac{354.1\ \text{MMBtu}}{\text{hr}} \times \frac{35{,}040\ \text{hr}}{\text{year}} \times \frac{\text{ton}}{2{,}000\ \text{lb}} = 1.37\ \text{tpy}$$

9 Hourly Emissions (lb/hr) = Vendor Provided Emissions (lb/hr) * 4 Turbines

$$\text{Hourly Emissions of PM/PM}_{10}\text{/PM}_{2.5}\text{ (lb/hr)} = \frac{3.70\ \text{lb}}{\text{hr}} \times 4\ \text{Turbines} = 14.80\ \text{lb/hr}$$

10 Annual Emissions (tpy) = Vendor Provided Emissions (lb/hr) * (8760 hours/year) * (1 ton/2,000 lb) * 4 Turbines

$$\text{Annual Emissions of PM/PM10/PM}_{2.5}\text{ (tpy)} = \frac{3.70\ \text{lb}}{\text{hr}} \times \frac{8760\ \text{hours}}{\text{year}} \times \frac{1\ \text{ton}}{2{,}000\ \text{lb}} \times 4\ \text{Turbines} = 64.82\ \text{tpy}$$

11 Hourly Emissions (lb/hr) = Calculated Short-Term Emission Factor (grains/100 scf) / grains per pound * Heat Consumption HHV (MMBtu/hr) * 10^6 / 1020 (scf/MMBtu) * 2 mols * 4 Turbines

$$\text{Hourly Emissions of SO}_2\text{ (lb/hr)} = \frac{5\ \text{grain}}{100\ \text{scf}} \times \frac{1\ \text{lb}}{7000\ \text{grains}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times \frac{1000000\ \text{Btu}}{1\ \text{MMBtu}} \times \frac{1\ \text{scf}}{1020\ \text{Btu}} \times \frac{64\ \text{lb/lb-mol}}{32\ \text{lb/lb-mol}} \times 4\ \text{Turbines} = 19.82\ \text{lb/hr}$$

12 Annual Emissions (tpy) = Long-Term Emission Factor (grains/100 scf) / grains per pound * Heat Consumption HHV (MMBtu/hr) * 10^6 / 1020 (scf/MMBtu) * 2 mols * (total hours/year) * (1 ton/2,000 lb)

$$\text{Annual Emissions of SO}_2\text{ (tpy)} = \frac{1\ \text{grain}}{100\ \text{scf}} \times \frac{1\ \text{lb}}{7000\ \text{grains}} \times \frac{354.07\ \text{MMBtu}}{\text{hr}} \times \frac{10\text{^6 scf}}{1{,}020\ \text{MMBtu}} \times \frac{64\ \text{lb/lb-mol}}{32\ \text{lb/lb-mol}} \times \frac{35{,}040\ \text{hours}}{\text{year}} \times \frac{1\ \text{ton}}{2{,}000\ \text{lb}} = 17.36\ \text{tpy}$$

13 Hourly Emissions (lb/hr) = SO2 Calculated Short-Term Emission Factor (lb/hr) * % Sulfur Converted * (H2SO4 MW / SO2 MW (lb/lb-mol)) * 4 Turbines

$$\text{Hourly Emissions of H}_2\text{SO}_4\text{ (lb/hr)} = \frac{4.96\ \text{lb}}{\text{hr}} \times 5\%\ \text{Sulfur converted} \times \frac{98.079\ \text{lb/lb-mol}}{64\ \text{lb/lb-mol}} \times 4\ \text{Turbines} = 1.52\ \text{lb/hr}$$

14 Annual Emissions (tpy) = SO_2 Calculated Long-Term Emission Factor (tpy) * % Sulfur Converted * (H_2SO_4 MW / SO_2 MW (lb/lb-mol))

$$\text{Annual Emissions of H}_2\text{SO}_4\text{ (tpy)} = \frac{17.36\ \text{tons}}{\text{yr}} \times 5\%\ \text{Sulfur converted} \times \frac{98.079\ \text{lb/lb-mol}}{64\ \text{lb/lb-mol}} = 1.33\ \text{tpy}$$

Table A-2
Startup Shutdown (SUSD) Turbine Emissions
SpaceX Starlink Factory Bastrop

Pollutant	Emission Factors	Unit	Source
NOx	25	ppmvd@ 15% O2	Uncontrolled Factors
CO	25	ppmvd@ 15% O2	Uncontrolled Factors

Pollutant	Unit	Value
NOx	ppmvd@ 15% O2	25
NOx	lb/MMBtu	0.099
CO	ppmvd@ 15% O2	25
CO	lb/MMBtu	0.060

		Emissions													
	Operating Schedule (hr/yr)	NOx		CO		VOC		$PM/PM_{10}/PM_{2.5}$		SO_2		H_2SO_4		HCHO	
EPN		lb/hr [1]	ton/yr [2]	lb/hr [3]	ton/yr [4]	lb/hr [5]	ton/yr [6]	lb/hr [5]	ton/yr [6]	lb/hr [5]	ton/yr [6]	lb/hr [5]	ton/yr [6]	lb/hr [5]	ton/yr [6]
CTG-1 through CTG-4	400	140.15	7.01	85.24	4.26	16.10	0.81	14.80	0.74	19.82	0.99	1.52	0.08	0.34	0.02
	Total	***140.15***	***7.01***	***85.24***	***4.26***	***16.10***	***0.81***	***14.80***	***0.74***	***19.82***	***0.99***	***1.52***	***0.08***	***0.34***	***0.02***

Notes:
1. Emissions factors for NOx and CO during MSS are 25 ppm, to account for worst-case emissions during startup.
2. Emissions factors for VOC, PM, and SO_2 remain the same during MSS.
3. Emission during Startup and Shutdown are assumed to be the same.
4. Emissions are calculated in the same manner as during routine operating conditions, utilizing the applicable emission factors for Maintenance, Startup, and Shutdown (MSS) activities.

Example emission calculations for one turbine:

[1] Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Heat Consumption HHV (MMBtu/hr)

$$\text{Hourly Emissions of NOx (lb/hr)} = \frac{0.0990 \text{ lb}}{\text{MMBtu}} \times \frac{354.1 \text{ MMBtu}}{\text{hr}} \times 4 \text{ Turbines} = 140.15 \text{ lb/hr}$$

[2] Annual Emissions (tpy) = Hourly Emission Rate (lb/hr) * Operating Hours (hrs/year) * (1 ton/2,000 lb)

$$\text{Annual Emissions of NOx (tpy)} = \frac{0.0990 \text{ lb}}{\text{MMBtu}} \times \frac{354.1 \text{ MMBtu}}{\text{hr}} \times \frac{400 \text{ hr}}{\text{year}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = 7.01 \text{ tpy}$$

[3] Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Heat Consumption HHV (MMBtu/hr)

$$\text{Hourly Emissions of CO (lb/hr)} = \frac{0.0602 \text{ lb}}{\text{MMBtu}} \times \frac{354.1 \text{ MMBtu}}{\text{hr}} \times 4 \text{ Turbines} = 85.24 \text{ lb/hr}$$

[4] Annual Emissions (tpy) = Worse Case Hourly Emission Rate (lb/hr) * Operating Hours (hrs/year) * (1 ton/2,000 lb)

$$\text{Annual Emissions of CO (tpy)} = \frac{0.0602 \text{ lb}}{\text{MMBtu}} \times \frac{354.1 \text{ MMBtu}}{\text{hr}} \times \frac{400 \text{ hr}}{\text{year}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = 4.26 \text{ tpy}$$

[5] Hourly Emissions for Remaining Pollutants (lb/hr) = Standard Operating Emissions (lb/hr)

[6] Annual Emissions (tpy) = Standard Operation Hourly Emission Rate (lb/hr) * Operating Hours (hrs/year) * (1 ton/2,000 lb)

$$\text{Annual Emissions of Remaining Pollutants (tpy)} = \frac{X \text{ lb}}{\text{hr}} \times \frac{400 \text{ hr}}{\text{year}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = X \text{ tpy}$$

APPENDIX B. EQUIPMENT TABLE

Texas Commission on Environmental Quality
Table 31
Combustion Turbines

Equipment Information	
Manufacturer: GE Vernova	
Model No.: LM2500Xpress	Serial No.:
Emission Point Number (EPN) From Table 1(a): CTG-1 thru CTG-4	

Turbine Application

☐ Electric Generation ☒ Base Load ☐ Peaking ☐ Load Following ☐ Gas Compression

☐ Other (specify):_____

Cycle

☒ Simple Cycle 8,760 Hours Per Year ☐ Regenerative Cycle ☐ Cogeneration ☐ Combined Cycle

Model represented is based on *(see 30 TAC § 116.116(a)):*

☐ Preliminary Design ☒ Contract Award ☐ Other (specify):_____

Nominal Power Output at Baseload, ISO: 37 ☒ MW or ☐ hp

Manufacturer's rated gross heat rate at baseload at expected conditions (efficiency in BTU/kW-hr):

9,529

Fuel Data

Primary Fuels:

☒ Natural Gas (Sulfur content 5 (max); 1 (avg.) gr S/100 dscf; HHV 1,020 Btu/scf)

☐ Process Offgas ☐ Landfill/Digester Gas ☐ Fuel Oil ☐ Refinery Gas

☐ Other (specify):_____

Backup Fuels:

☐ Not Provided ☐ Process Offgas ☐ Ethane ☐ Fuel Oil ☐ Refinery Gas

☐ Other (specify):_____

If using fuels other than natural gas, attach fuel analyses, including maximum sulfur content, heating value (specify LHV or HHV) and mole percent of gaseous constituents.

Emissions Data

Attach manufacturer's information showing emissions of NO_X, CO, VOC, SO_X, and PM for each proposed fuel at turbine loads and site ambient temperatures representative of the range of proposed operation. The information must be sufficient to determine maximum hourly and annual emission rates. Annual emissions may be based on a conservatively low approximation of site annual average temperature. Provide emissions in pounds per hour and except for PM, parts per million by volume at actual conditions and corrected to dry, 15% oxygen conditions. In Table 1(a), provide speciation of $PM/PM_{10}/PM_{2.5}$.

Method of Emission Control:

☐ Lean Premix Combustors ☐ Oxidation Catalyst ☐ Water Injection

☐ Low-NO_x Combustors ☐ SCR Catalyst ☐ Steam Injection

☒ Other (specify): SCR and Oxidation Catalyst

Additional Information
On separate sheets attach the following: A. Details regarding principle of operation of emission controls. If add-on equipment is used, provide make and model and manufacturer's information. Example details include: controller input variables and operational algorithms for water or ammonia injection systems, combustion mode versus turbine load for variable mode combustors, etc. B. Stack parameters (not required if represented on Page 2 of Table 1(a)). C. If fired duct burners are used (as often used with a Combined Cycle Heat Recovery Steam Generator), supplementary fuel firing information as specified on Table 6, Boilers and Heaters (TCEQ Form Number 10163).

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APPENDIX C. EGU STANDARD PERMIT

Air Quality Standard Permit for Electric Generating Units

Effective Date May 16, 2007

This standard permit authorizes electric generating units that generate electricity for use by the owner or operator and/or generate electricity to be sold to the electric grid, and that meet all of the conditions listed below.

(1) *Applicability*
- (A) *This standard permit may be used to authorize electric generating units installed or modified after the effective date of this standard permit and that meet the requirements of this standard permit.*
- (B) *This standard permit may not be used to authorize boilers. Boilers may be authorized under the Air Quality Standard Permit for Boilers; 30 TAC § 106.183, Boilers, Heaters, and Other Combustion Devices; or a permit issued under the requirements of 30 TAC Chapter 116.*

(2) *Definitions*
- (A) *East Texas Region - All counties traversed by or east of Interstate Highway 35 or Interstate Highway 37, including Bosque, Coryell, Hood, Parker, Somervell and Wise Counties.*
- (B) *Installed - a generating unit is installed on the site when it begins generating electricity.*
- (C) *West Texas Region - Includes all of the state not contained in the East Texas Region.*
- (D) *Renewable fuel - fuel produced or derived from animal or plant products, byproducts or wastes, or other renewable biomass sources, excluding fossil fuels. Renewable fuels may include, but are not limited to, ethanol, biodiesel, and biogas fuels.*

(3) *Administrative Requirements*
- (A) *Electric generating units shall be registered in accordance with 30 TAC § 116.611, Registration to Use a Standard Permit, using a current Form PI-1S. Units that meet the conditions of this standard permit do not have to meet 30 TAC § 116.610(a)(1), Applicability.*
- (B) *Registration applications shall comply with 30 TAC § 116.614, Standard Permit Fees, for any single unit or multiple units at a site with a total generating capacity of 1 megawatt (MW) or greater. The fee for units or multiple units with a total generating capacity of less than 1 MW at a site shall be $100.00. The fee shall be waived for units or multiple units with a total generating capacity of less than 1 MW at a site that have certified nitrogen oxides (NO_x) emissions that are less than 10 percent of the standards required by this standard permit.*
- (C) *No owner or operator of an electric generating unit shall begin construction and/or operation without first obtaining written approval from the executive director.*
- (D) *Records shall be maintained and provided upon request to the Texas Commission on Environmental Quality (TCEQ) for the following:*
  - (i) *Hours of operation of the unit;*
  - (ii) *Maintenance records, maintenance schedules, and/or testing reports for the unit to document re-certification of emission rates as required by subsection (4)(G) below; and*
  - (iii) *Records to document compliance with the fuel sulfur limits in subsection (4)(C).*

(E) *Electric generators powered by gas turbines must meet the applicable conditions, including testing and performance standards, of Title 40 Code of Federal Regulations (CFR) Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, and applicable requirements of 40 CFR Part 60 Subpart KKKK, Standards of Performance for Stationary Combustion Turbines.*

(F) *Compliance with this standard permit does not exempt the owner or operator from complying with any applicable requirements of 30 TAC Chapter 117, Control of Air Pollution from Nitrogen Compounds, or 30 TAC Chapter 114, Control of Air Pollution from Motor Vehicles.*

(4) *General Requirements*

(A) *Emissions of NO_x from the electric generating unit shall be certified by the manufacturer or by the owner or operator in pounds of pollutant per megawatt hour (lb/MWh). This certification must be displayed on the name plate of the unit or on a label attached to the unit. Test results from U.S. Environmental Protection Agency (EPA) reference methods, California Air Resources Board methods, or equivalent alternative testing methods approved by the executive director used to verify this certification shall be provided upon request to the TCEQ. The unit must operate on the same fuel(s) for which the unit was certified.*

(B) *Electric generating units that use combined heat and power (CHP) may take credit for the heat recovered from the exhaust of the combustion unit to meet the emission standards in subsections (4)(D), (4)(E), and (4)(F). Credit shall be at the rate of one MWh for each 3.4 million British Thermal Units of heat recovered. The following requirements must be met to take credit for CHP for units not sold and certified as an integrated package by the manufacturer:*

(i) *The owner or operator must provide as part of the application documentation of the heat recovered, electric output, efficiency of the generator alone, efficiency of the generator including CHP, and the use for the non-electric output, and*

(ii) *The heat recovered must equal at least 20 percent of the total energy output of the CHP unit.*

(C) *Fuels combusted in these electric generating units are limited to:*

(i) *Natural gas containing no more than ten grains total sulfur per 100 dry standard cubic feet;*

(ii) *Landfill gas, digester gas, stranded oilfield gas, or gaseous renewable fuel containing no more than 30 grains total sulfur per 100 dry standard cubic feet; or*

(iii) *Liquid fuels (including liquid renewable fuel) not containing waste oils or solvents and containing less than 0.05 percent by weight sulfur.*

(D) *Except as provided in subsections (4)(F) and (4)(H), NO_x emissions for units 10 MW or less shall meet the following limitations based upon the date the unit is installed and the region in which it operates:*

East Texas Region:

(i) *Units installed prior to January 1, 2005 and*

(a) *operating more than 300 hours per year - 0.47 lb/MWh;*

(b) *operating 300 hours or less per year - 1.65 lb/MWh;*

(ii) *Units installed on or after January 1, 2005 and*

(a) *operating more than 300 hours per year, with a capacity greater than 250 kilowatts (kW) - 0.14 lb/MWh;*

(b) *operating 300 hours or less per year - 0.47 lb/MWh; or*

(c) *any unit with a capacity of 250 kW or less - 0.47 lb/MWh.*

West Texas Region:

(i) *Units operating more than 300 hours per year - 3.11 lb/MWh;*

(ii) *Units operating 300 hours or less per year - 21 lb/MWh. Units certified to comply with applicable Tier 1, 2, or 3 emission standards in 40 CFR Part 89, Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines, are deemed to satisfy this emission limit.*

(E) *Except as provided in subsections (4)(F) and (4)(H), NO_x emissions for units greater than 10 MW shall meet the following limitations:*

(i) *Units operating more than 300 hours per year - 0.14 lb/MWh;*

(ii) *Units operating 300 hours or less per year - 0.38 lb/MWh.*

(F) *Electric generating units firing any gaseous or liquid fuel that is at least 75 percent landfill gas, digester gas, stranded oil field gas, or renewable fuel content by volume, shall meet a NO_x emission limit of 1.90 lb/MWh. Units in West Texas with a capacity of 10 MW or less that fire at least 75 percent landfill gas, digester gas, stranded oilfield gases, or gaseous or liquid renewable fuel by volume, must comply with the applicable West Texas NO_x limit in subsection (4)(D).*

(G) *To ensure continuing compliance with the emissions limitations, the owner or operator shall re-certify a unit every 16,000 hours of operation, but no less frequently than every three years. Re-certification may be accomplished by following a maintenance schedule that the manufacturer certifies will ensure continued compliance with the required NO_x standard or by third party testing of the unit using appropriate EPA reference methods, California Air Resources Board methods, or equivalent alternative testing methods approved by the executive director to demonstrate that the unit still meets the required emission standards. After re-certification, the unit must operate on the same fuel(s) for which the unit was re-certified.*

(H) *The NO_x emission limits in subsections (4)(D)-(4)(F) are subject to the following exceptions:*

(i) *The hourly NO_x emission limits do not apply at times when the ambient air temperature at the location of the unit is less than 0 degrees Fahrenheit.*

At times when a unit is operating at less than 80% of rated load, an alternative NO_x emission standard for that unit may be determined by multiplying the applicable emission standard in subsections (4)(D)-(4)(F) by the rated load of the EGU (in MW), to produce an allowable hourly mass NO_x emission rate. In order to use this alternative standard, an owner or operator must maintain records that demonstrate compliance with the alternative emission standard, and make such records available to the TCEQ or any local air pollution control agency with jurisdiction upon request.