STANDARD AIR PERMIT APPLICATION

ENGIE FLEXIBLE GENERATION NA LLC – ROBSTOWN, TX

JULY 2024

SUBMITTED BY:

ENGIE Flexible Generation NA LLC
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SUBMITTED TO:

Texas Commission on Environmental Quality
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1. INTRODUCTION AND APPLICATION ORGANIZATION

1.1 EXECUTIVE SUMMARY

ENGIE Flexible Generation NA LLC (ENGIE) retained ALL4 LLC (ALL4) to prepare this Standard Air Permit Application (Application) for the installation and operation of three natural gas-fired simple cycle turbines with Selective Catalytic Reduction (SCR) controls (Project). The turbines will be located at the Perseus Facility (Site), which will be located at CO Rd 48, Robstown, TX 78380 in Nueces County. ENGIE is seeking authorization of the Project by claiming the Air Quality standard permit for Electric Generating Units (EGUs) under 30 Texas Administrative Code (TAC) Chapter 116, Subchapter F.

1.2 DOCUMENT SUBMISSION

This Application is being submitted electronically through the State of Texas Environmental Electronic Reporting System (STEERS) in accordance with the provisions of 30 TAC Chapter 116, Subchapter F. A PI-1S form is being submitted with this application in order to register this standard permit.

1.3 DOCUMENT ORGANIZATION

The required components of the Application are provided in the following sections and appendices:

- Section 2: Project and Process Descriptions
- Section 3: Figures
- Section 4: Regulatory Applicability Analysis
- Section 5: Summary of Emissions and Emissions Calculations
- Appendix A: Texas Commission on Environmental Quality Forms
    - TCEQ 20833: PI-1S – Registration for Air Standard Permit (06/21)
    - TCEQ 10400: Core Data Form (02/21)
    - TCEQ 10197: Table 31 – Combustion Turbines (Revised 07/16)
- Appendix B: Standard Permit for Electric Generating Units Applicability
- Appendix C: Equipment Specification Sheets

2. PROJECT AND PROCESS DESCRIPTIONS

ENGIE is proposing to install and operate three natural gas-fired simple cycle turbines. The turbines are Siemens model SGT6-8000H with a total nameplate capacity of 930 megawatts (MW). These turbines are electric generating units (EGUs) that will be used to generate electricity to be sold to the electric grid.

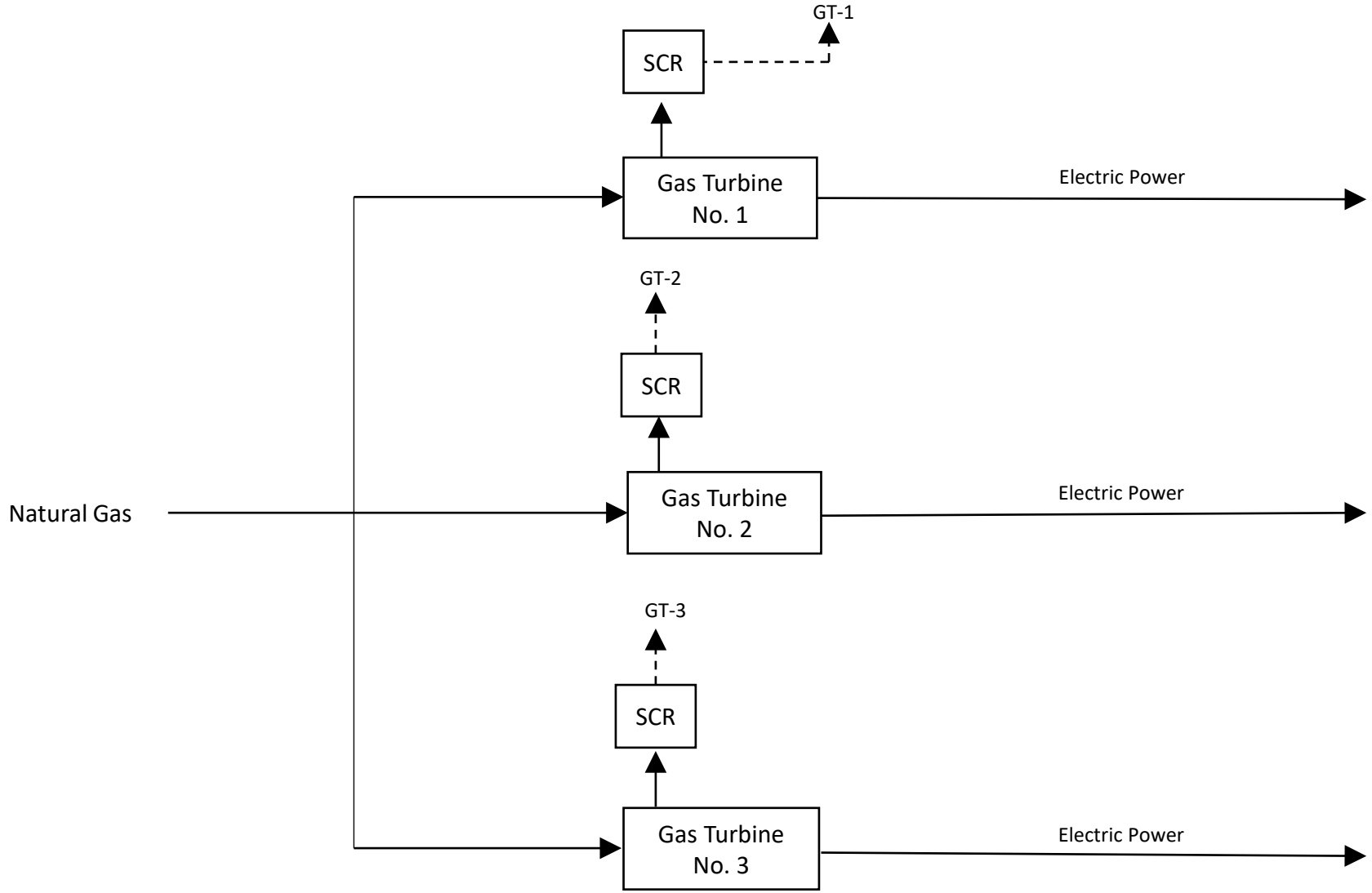
The turbines are equipped with selective catalytic reduction (SCR) to control emissions of nitrogen oxides (NO_X). ENGIE is requesting to limit operational hours of the turbines to 2,000 hours per 12-month rolling period so that their potential to emit (PTE) for regulated New Source Review (NSR) pollutants is below the prevention of significant deterioration (PSD) major source thresholds outlined in 40 CFR §52.21(b)(1)(i)(b).

Once permitted, the turbines will operate for the Emergency Response Service (ERS) managed by the Electric Reliability Council of Texas (ERCOT). ERCOT is the non-profit corporation that oversees the Texas power grid. As such, ERCOT selects qualified loads and generators to make themselves available for deployment in a power grid emergency.

The turbines will also operate in non-emergency situations, including but not limited to, participation in the 4 Coincident Peak (4CP) program, demand response program participation, and electrical power generation for the Site.

3. FIGURES

The Site will be located at CO Rd 48, Robstown, TX 78380. The turbine operation is depicted in a process flow diagram in Figure 3-1. The immediate surrounding area of the Site is depicted in an area map in Figure 3-2. The Site boundary and affected emissions points associated with the Project are depicted in a plot plan in Figure 3-3.



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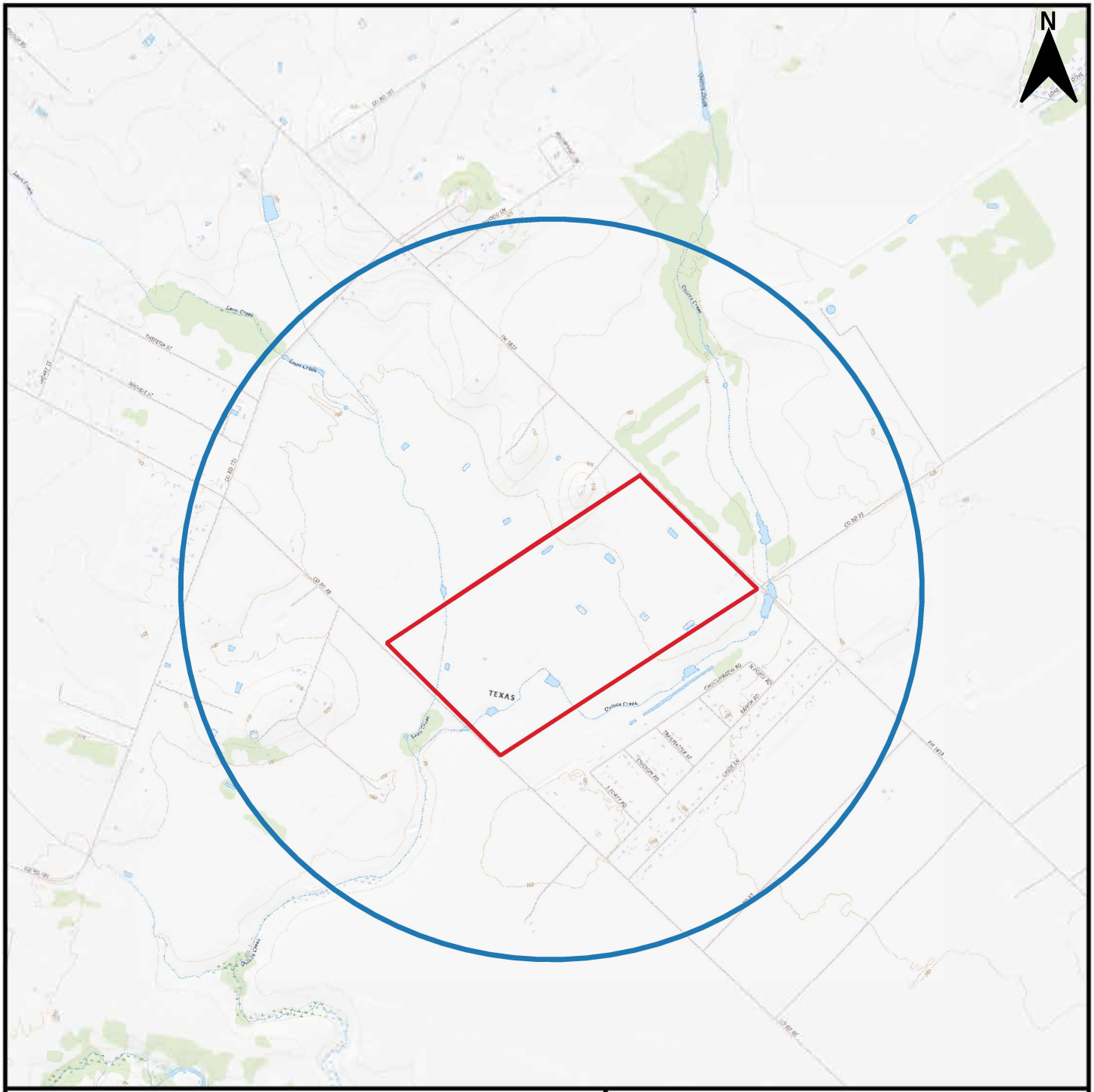
CONTINUOUS FLOW

EMISSIONS TO ATMOSPHERE

Figure 3-1
Process Flow Diagram

ENGIE Flexible Generation NA LLC – Perseus Site
Robstown, TX

PREPARED BY:	**L.B.**	CHECKED BY:	**W.H.**
DATE:	**July 2024**	PROJECT NO:	**000960-0005**



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- 3,000 ft radius
- Property Boundary

0 250 500 750 1,000 m

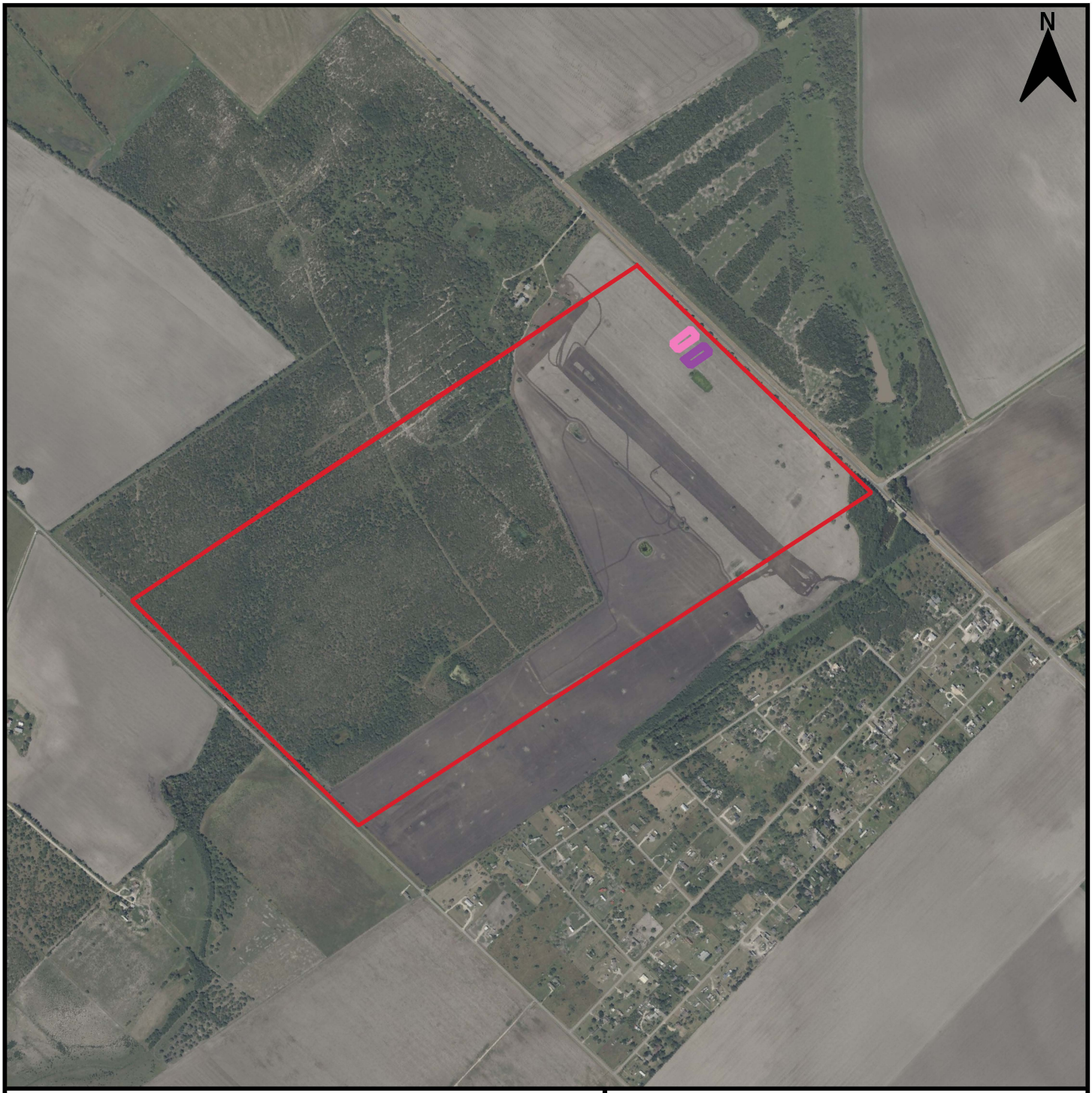
Figure 3-2
Area Location Map

ENGIE Flexible Generation NA LLC
Perseus Facility
Robstown, TX

PREPARED BY: P.R.	CHECKED BY: T.G.
DATE: July 2024	PROJECT NO.: 000960-0005

ALL4

Topographic Map Courtesy of the United States Geological Survey



Legend

- Property Boundary
- GT-1
- GT-2

0 125 250 375 500 m

Figure 3-3
Facility Plot Plan

ENGIE Flexible Generation NA LLC
Perseus Facility
Robstown, TX

PREPARED BY: P.R.	CHECKED BY: T.G.
DATE: July 2024	PROJECT NO.: 000960-0005

ALL4

Topographic Map Courtesy of the United States Geological Survey

4. REGULATORY APPLICABILITY ANALYSIS

4.1 STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

The United States Environmental Protection Agency (U.S. EPA) has promulgated standards of performance for specific new, reconstructed, and modified sources, otherwise known as Standards of Performance for New Stationary Sources (NSPS), which are codified at 40 CFR Part 60. Potentially applicable NSPS are discussed in the following subsections.

4.1.1 40 CFR Part 60, Subpart A – General Provisions

The provisions of 40 CFR Part 60, Subpart A apply to the owner or operator of any stationary source subject to an NSPS. These general provisions include recordkeeping, reporting, monitoring, and testing requirements. Because the Project will be subject to a NSPS, ENGIE will be required to comply with the applicable requirements of 40 CFR Part 60, Subpart A.

4.1.2 40 CFR Part 60, Subpart GG – Standards of Performance for Stationary Gas Turbines

The requirements of 40 CFR Part 60, Subpart GG (Standards of Performance for Stationary Gas Turbines) apply to all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules [10.7 million British thermal units (MMBtu) per hour], based on the lower heating value of the fuel fired, which commence construction, modification, or reconstruction after October 3, 1977, as specified in 40 CFR §60.330. Subpart GG is potentially applicable to the three proposed turbines because each turbine has a nameplate capacity of 310 MW, which is equivalent to approximately 3,001.9 MMBtu/hr, and is being constructed after October 3, 1977. However, the turbines are exempt from the requirements of Subpart GG because they are subject to 40 CFR Part 60, Subpart KKKK, per 40 CFR §60.4305(b). Applicability of Subpart KKKK is discussed in Section 4.1.3.

4.1.3 40 CFR Part 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

40 CFR Part 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) establishes emissions standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005. Per 40

CFR §60.4305(a), the three proposed turbines are subject to Subpart KKKK because each turbine has a nameplate capacity of 310 MW, which is equivalent to approximately 3,001.9 MMBtu/hr, and is being constructed after February 18, 2005. ENGIE will comply with the applicable requirements of 40 CFR Part 60, Subpart KKKK.

The proposed turbines will be subject to the Subpart KKKK emissions standards for NO_X and sulfur dioxide (SO_2). The proposed turbines must comply with the following NO_X and SO_2 emissions standards for a new turbine firing natural gas with a heat input at peak load of greater than 850 MMBtu/hr:

- 40 CFR §60.4320 and Table 1 - NO_X
  - 15 ppm at 15% O_2 (natural gas), or
  - 0.43 pounds per megawatt hour (lb/MWh) (natural gas) of useful output
- 40 CFR §60.4330(a)(1) and (2) – SO_2
  - 0.90 lb/MWh gross output, or
  - 0.060 lb/MMBtu heat input

ENGIE will demonstrate compliance with 40 CFR Part 60, Subpart KKKK requirements via several methods. For NO_X emissions limits, ENGIE will demonstrate compliance with the NO_X emissions limit per 40 CFR §60.4335(b) and §60.4340(b) with a NO_X continuous emissions monitoring system (CEMS). The use of natural gas to fire the proposed turbines will ensure that the SO_2 emissions standards are met and, per 40 CFR §60.4365, ENGIE will use natural gas supplier data to document the sulfur content of the fuel. Per 40 CFR §60.4400, ENGIE will conduct the necessary initial and subsequent NO_X performance tests and submit the necessary reports required per 40 CFR Part 60, Subpart KKKK. In addition, ENGIE will comply with the following applicable Subpart KKKK reporting and recordkeeping requirements and provisions:

- 40 CFF §60.4340(b) - NO_X monitoring requirements
- 40 CFR §60.4345(b) – NO_X CEMS Requirements
- 40 CFR §60.4350(b) – NO_X CEMS recordkeeping requirements
- 40 CFR §60.4365(a) – Fuel recordkeeping requirements
- 40 CFR §60.4375(a) – Excess emissions reporting requirements
- 40 CFR §60.4395 – Reporting frequency requirement

4.1.4 40 CFR Part 60, Subpart TTTTa – Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units

40 CFR Part 60, Subpart TTTTa establishes emissions standards and compliance schedules for the control of greenhouse gas (GHG) emissions to owners or operators of coal-fired steam generating unit or integrated gasification combined cycle facility (IGCC) that commences modification after May 23, 2023. Subpart TTTTa also establishes emissions standards and compliance schedules for the control of GHG emissions from a stationary combustion turbine that commences construction or reconstruction after May 23, 2023. Pursuant to 40 CFR §60.5509a, this subpart applies to any stationary combustion turbine and that has a base-load rating greater than 250 MMBtu/hr of fossil fuel and serves a generator capable of selling 25 MW of electricity to a utility power distribution system. Therefore, the turbines at the Site meet these criteria and will be subject to the requirements of Subpart TTTTa.

The turbines at the Site will be classified as "intermediate load combustion turbines" as defined in 40 CFR §60.5580a. An intermediate load combustion turbine is a stationary combustion turbine that supplies more than 20% but less than or equal to 40% of its potential electric output as net-electric sales on both a 12-operating month and a 3-year rolling average basis. Therefore, in accordance with 40 CFR §60.5520a(a), the turbines at the Site will be subject to the following carbon dioxide (CO_2) emissions standards specified in Table 1 of Subpart TTTTa for intermediate combustion turbines:

- CO_2: 530 to 710 kilograms per megawatt hour (kg/MWh) of gross energy output; or
- CO_2: 540 to 700 kilograms per megawatt hour (kg/MWh) of net energy output.

In accordance with 40 CFR §60.5520a(d)(1), the turbines at the Site will only combust natural gas which is a uniform fuel with a consistent chemical composition that results in a consistent CO_2 emissions rate of less than 160 lb/MMBtu and will therefore not be subject to the monitoring and reporting requirements of Subpart TTTTa. The Site will maintain records of electric sales and fuel purchase records pursuant to 40 CFR §60.5520a(d) and 40 CFR §60.5525a, respectively.

4.2 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The National Emission Standards for Hazardous Air Pollutants (NESHAP) originally required by the 1970 Clean Air Act (CAA), found at 40 CFR Part 61, apply to specific hazardous air pollutants (HAP) emitted from

specific source categories. The Project does not fall under any of the pollutant-specific source categories regulated by 40 CFR Part 61. Therefore, 40 CFR Part 61 requirements are not applicable to the Project.

The provisions of 40 CFR Part 63 contain NESHAP that apply to specific source categories that are considered either major or area sources of HAP. A major source of HAP is defined as a stationary source that has a potential to emit (PTE) of 10 tons per year (tpy) or more for any single HAP or 25 tpy or more for any combination of HAP. Emissions from the Site do not exceed the 10 tpy threshold for any single HAP or the 25 tpy threshold for any combination of HAP. Therefore, the Site is an area source of HAP. Potentially applicable Part 63 Subparts are discussed in the following subsections.

4.2.1 40 CFR Part 63, Subpart A – General Provisions

The provisions of 40 CFR Part 63, Subpart A apply to the owner or operator of any stationary source that emits or has the potential to emit any HAP listed in or pursuant to section 112(b) of the Clean Air Act and is subject to any NESHAP. These general provisions include recordkeeping, reporting, monitoring, and testing requirements. Because the Project will not be subject to a NESHAP, ENGIE will not be required to comply with applicable requirements of 40 CFR Part 63, Subpart A.

4.2.2 40 CFR Part 63, Subpart YYYY – National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

40 CFR Part 63, Subpart YYYY (National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines) applies to stationary combustion turbines located at major sources of HAP emissions. The Site is an area source of HAP; therefore, the provisions of 40 CFR Part 63, Subpart YYYY do not apply to the proposed turbines.

4.3 CROSS STATE AIR POLLUTION RULE

U.S. EPA's Cross-State Air Pollution Rule (CSAPR) was first finalized by U.S. EPA on July 6, 2011. The timing of the rule implementation was impacted by several court decisions since its finalization including a stay of implementation. On October 23, 2014, the District of Colombia (D.C.) Circuit Court ordered that U.S. EPA's motion to lift the stay of CSAPR be granted. CSAPR Phase 1 implementation began in 2015, with Phase 2 beginning in 2017. The final rule requires power plants in 28 states to decrease annual SO_2 and NO_X emissions to help downwind areas realize attainment with the O_3 and $PM_{2.5}$ NAAQS.

Therefore, ENGIE will be required to meet the requirements of CSAPR codified in 40 CFR Part 97, Subpart GGGGG [relating to the Transport Rule (TR) NO_X Ozone Season Group 3 Trading Program] and 40 CFR Part 97. Upon operation, ENGIE will comply with the following applicable 40 CFR Part 97 monitoring, reporting, and recordkeeping requirements and provisions:

- 40 CFR Part 97 Subpart GGGGG – CSAPR NO_X Ozone Season Group 3 Trading Program
  - 40 CFR §97.1006(b) – Emissions monitoring, reporting, and recordkeeping requirements
  - 40 CFR §97.1006(c) – NO_X emissions requirements
  - 40 CFR §97.1006(d) – TVOP requirements
  - 40 CFR §97.1006(e) – Additional recordkeeping and reporting requirements

4.4 ACID RAIN PROGRAM

The Acid Rain Program (ARP) is codified in 40 CFR Parts 72 through 78 and addresses Title IV of the CAA which aims to reduce acid rain by reduction of SO_2 and NO_X emissions from existing and new utility units that have a nameplate electricity generation capacity greater than 25 MW. The proposed turbines will be subject to the ARP and ENGIE will comply with the applicable provisions of the following parts:

- 40 CFR Part 72 – Permits Regulation
  - 40 CFR §72.30(b)(2)(ii)
  - 40 CFR Part 72, Subpart D (Acid Rain Compliance Plan and Compliance Options)
- 40 CFR Part 73 – Sulfur Dioxide Allowance System
- 40 CFR Part 75 – Continuous Emission Monitoring
  - 40 CFR Part 75, Subpart G (Reporting Requirements)
  - 40 CFR §75.20(a)(2)
  - 40 CFR §75.64(a)
- 40 CFR Part 77 – Excess Emissions

The Phase II Acid Rain permit application required under 40 CFR §72.30(b)(2)(ii) will be filed at least 24 months before the unit commences operation of any mechanical, chemical, or electronic processes which include startup of the combustion chamber. The application will include the date that the unit will commence operation and the deadline for monitoring certification (i.e., 90 days after commencement of commercial operation).

ENGIE will arrange for the establishment of an SO_2 emissions account for the Project. ENGIE will be responsible for obtaining the necessary emissions allowances and then overseeing the tracking, holding, and transfer of the allowances. ENGIE will develop a Title IV Acid Rain compliance plan as required pursuant to 40 CFR Part 72, Subpart D. ENGIE will begin submitting quarterly emissions reports pursuant

to 40 CFR Part 75 Subpart G (Reporting Requirements) in accordance with 40 CFR §75.64(a) the earlier of the date of provisions certification as defined in 40 CFR §75.20(a)(2) or 180 after the date on which the turbines commence commercial operation (as defined by 40 CFR §72.2).

4.5 STATE OF TEXAS AIR QUALITY REGULATIONS

Potentially applicable State of Texas regulations as codified in 30 TAC – Environmental Quality are summarized below and discussed in the following subsections:

- 30 TAC Chapter 101 – General Air Quality Rules
- 30 TAC Chapter 111 – Control of Air Pollution from Visible Emissions and Particulate Matter
- 30 TAC Chapter 112 – Control of Air Pollution from Sulfur Compounds
- 30 TAC Chapter 113 – Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants
- 30 TAC Chapter 115 – Control of Air Pollution from Volatile Organic Compounds
- 30 TAC Chapter 116 – Control of Air Pollution by Permits for New Construction or Modification
- 30 TAC Chapter 117 – Control of Air Pollution from Nitrogen Compounds
- 30 TAC Chapter 118 – Control of Air Pollution Episodes
- 30 TAC Chapter 122 – Federal Operating Permits Program

4.5.1 30 TAC Chapter 101 – General Air Quality Rules

30 TAC Chapter 101 (General Air Quality Rules) specifies the general air quality rules for the State of Texas. ENGIE will demonstrate compliance with the requirements of 30 TAC Chapter 101 upon commencement of operation as applicable.

4.5.2 30 TAC Chapter 111 – Control of Air Pollution from Visible Emissions and Particulate Matter

Standards for visible emissions and particulate matter (PM) are addressed in 30 TAC Chapter 111 (Control of Air Pollution from Visible Emissions and Particulate Matter). Specifically, 30 TAC §111.111(a)(1)(B) prohibits visible emissions in excess of 20% averaged over a six-minute period for any source. The proposed turbines will only burn natural gas which is clean, and are not expected to have visible emissions in excess of 20%.

Allowable PM emissions limits for nonagricultural processes are addressed in 30 TAC §111.151. Specifically, 30 TAC §111.151(a) prohibits PM from any of the three turbines to exceed the allowable rate of 51.93 lb total suspended particulate (TSP)/hr, or 155.79 lb TSP/hr from all turbines combined, as specified in Table 1 of the rule. The emissions inventory provided in Table 5-1 demonstrates that the Site will be below this limit. The proposed turbines will combust natural gas and will be maintained and operated in accordance with manufacturer recommendations. Thus, the turbines will demonstrate compliance with the PM emissions requirements, as applicable.

4.5.3 30 TAC Chapter 112 – Control of Air Pollution from Sulfur Compounds

Allowable emissions limits from sulfur compounds are addressed in 30 TAC Chapter 112 (Control of Air Pollution from Sulfur Compounds). ENGIE will meet the provisions of 30 TAC Chapter 112 as applicable. As addressed in Table 5-1, the Site will not emit hydrogen sulfide (H_2S), sulfuric acid (H_2SO_4), or total reduced sulfur (TRS). The Site will emit SO_2. Regulated units addressed in 30 TAC Chapter 112 include sulfuric acid plants, sulfur recovery plants, solid fossil fuel-fired steam generators, liquid fuel-fired steam generators, furnaces or heaters, and non-ferrous smelters. The Project does not include this equipment. Additionally, the Site will meet the exemption conditions established for net ground level concentration limits established in 30 TAC §112.4. Therefore, the Site is not subject to the provisions in 30 TAC Chapter 112.

4.5.4 30 TAC Chapter 113 – Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants

The provisions of 30 TAC Chapter 113 (Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants), Subchapter C incorporate multiple Federal 40 CFR Part 63 NESHAP by reference. The Project is not subject to any NESHAP. Therefore, 30 TAC Chapter 113 does not apply to the Project.

4.5.5 30 TAC Chapter 115 – Control of Air Pollution from Volatile Organic Compounds

The provisions of 30 TAC Chapter 115 (Control of Air Pollution from Volatile Organic Compounds) apply to specific volatile organic compound (VOC)-emitting processes, and a natural gas-fired turbine is not one of the defined processes in this Chapter. Therefore, the Project is not subject to 30 TAC Chapter 115.

4.5.6 30 TAC Chapter 116 – Control of Air Pollution by Permits for New Construction or Modification

In accordance with the provisions of 30 TAC Chapter 116, Subchapter F, ENGIE is submitting this Standard Air Permit Application to TCEQ. The necessary components of a Standard Air Permit Application have been provided in accordance with the registration requirements outlined in 30 TAC §116.611(a). As mentioned in the PI-1S form provided in Appendix A, this Application must demonstrate applicability of the general requirements outlined in 30 TAC §116.610 and §116.615 as discussed in the following subsections.

4.5.6.1 30 TAC §116.610 – Standard Permit Applicability

The rules promulgated in 30 TAC §116.610 discuss the general applicability of standard permits to a facility. The Project meets all of the requirements of 30 TAC Chapter 116, Subchapter F and under the Texas Clean Air Act §382.051 is entitled to this standard permit. Furthermore, the Project will meet all conditions and comply with the conditions of rule of 30 TAC §116.610(a). In particular, the Air Quality standard permit for Electric Generating Units exempts the turbines from the requirement of 30 TAC §116.610(a)(1) which requires the net increase in emissions of any air contaminants must meet the emissions limitations of 30 TAC §106.261.

This Project does not constitute a new major stationary source as defined in 30 TAC §116.12, so the requirements of 30 TAC §116.610(b) are not applicable. ENGIE will not circumvent applicable

requirements pursuant to 30 TAC §116.610(c). Also, the Project does not include an affected source as described in 30 TAC §116.15(1), so the requirements of 30 TAC §116.610(d) are not applicable. Appendix B contains a markup of the Air Quality Standard Permit for Electric Generating Units with detail on how the turbines meet the requirements.

4.5.6.2 30 TAC §116.615 – General Conditions

The provisions of 30 TAC §116.615 provide the general conditions that are applicable to standard permits but are not included within the specific standard permit documentation. ENGIE will comply with the general conditions outlined in 30 TAC §116.615. A copy of the standard permit and data sufficient to demonstrate applicability and compliance will be maintained at the Site pursuant to 30 TAC §116.615(8).

4.5.7 30 TAC Chapter 117 – Control of Air Pollution from Nitrogen Compounds

The provisions of 30 TAC Chapter 117 (Control of Air Pollution from Nitrogen Compounds) regulate control measures for nitrogen compounds as required for certain areas of Texas. Per 40 CFR §81.344, Nueces County is classified as an attainment area with respect to all 8-hour ozone standards of the National Ambient Air Quality Standards (NAAQS). Because the Project will be a minor source and Nueces County is attaining the ozone NAAQS, 30 TAC Chapter 117, Subchapters B, C, and D do not apply. The turbines will be located in East Texas; therefore, 30 TAC Chapter 117, Subchapter E is potentially applicable to the Project. The turbines are specifically potentially subject to Division 1 – Utility Electric Generation in East and Central Texas but are being placed into service after December 31, 1995. Per 30 TAC §117.3000(a)(3), ENGIE is not subject to the rule.

4.5.8 30 TAC Chapter 118 – Control of Air Pollution Episodes

The provisions of 30 TAC Chapter 118 (Control of Air Pollution Episodes) require control measures when immediate action is needed to control air pollution episodes. 30 TAC Chapter 118 is generally applicable to the Project, and ENGIE will comply with the requirements in the event an air pollution episode occurs.

4.5.9 30 TAC Chapter 122 – Federal Operating Permits Program

The provisions of 30 TAC Chapter 122 (Federal Operating Permits Program) contain the regulations that make up the Federal Operating Permit Program (i.e., Title V). Air emissions for the Project will trigger

major source status under the Title V Operating Permit (TVOP) program. Once construction is complete, ENGIE will submit an application for a TVOP.

5. SUMMARY OF EMISSIONS AND EMISSIONS CALCULATIONS

The emissions for the proposed turbines were calculated using the U.S. EPA's *Compilation of Air Pollutant Emissions Factors* (AP-42) and vendor-specific values from equipment specification sheets, provided in Appendix C. Specifically, the emissions factors for natural gas combustion are found in AP-42 Chapter 3.1, Table 3.1-2, except as noted in Table 5-1. A potential to emit (PTE) summary for the turbines is provided in Table 5-1.

Table 5-1
Potential to Emit for Natural Gas-Fired Gas Turbines [a]
ENGIE Flexible Generation - Perseus Site

Pollutant	Emissions Factor		Single Turbine Potential Emissions		Total Potential Emissions		PSD Major Source Threshold	PSD Major Source?
			lb/hr	tpy	lb/hr	tpy		
Criteria Pollutants								
PM (filterable) [b]	1.90E-03	lb/MMBtu	5.70	5.70	17.11	17.11	250	**No**
PM_{10} [b][c]	6.60E-03	lb/MMBtu	19.81	19.81	59.44	59.44	250	**No**
$PM_{2.5}$ [b][c]	6.60E-03	lb/MMBtu	19.81	19.81	59.44	59.44	250	**No**
SO_2 [d]	2.00E-01	gr/Ccf	0.84	0.84	2.52	2.52	250	**No**
NO_x [d]	81.57	lb/hr	27.19	30.79	81.57	92.38	250	**No**
CO [e]	0.02	lb/MMBtu	45.03	45.03	135.09	135.09	250	**No**
VOC [b]	2.10E-03	lb/MMBtu	6.30	6.30	18.91	18.91	250	**No**
CO_2 [b]	110	lb/MMBtu	330,209	330,209	990,627	990,627	--	--
CH_4 [b]	8.60E-03	lb/MMBtu	25.82	25.82	77.45	77.45	--	--
N_2O [b]	3.00E-03	lb/MMBtu	9.01	9.01	27.02	27.02	--	--
CO_2e [f]	111.11	lb/MMBtu	333,538	333,538	1,000,614	1,000,614	100,000	**No**
NH_3	5	ppmdv @ 15% O_2	20.43	20.43	61.29	61.29	--	--
Hazardous Air Pollutants (HAP) [g]								
1,3-Butadiene [h]	4.30E-07	lb/MMBtu	1.29E-03	1.29E-03	3.87E-03	3.87E-03	--	--
Acetaldehyde	4.00E-05	lb/MMBtu	0.12	0.12	0.36	0.36	--	--
Acrolein	6.40E-06	lb/MMBtu	0.02	0.02	0.06	0.06	--	--
Benzene	1.20E-05	lb/MMBtu	0.04	0.04	0.11	0.11	--	--
Ethylbenzene	3.20E-05	lb/MMBtu	0.10	0.10	0.29	0.29	--	--
Formaldehyde [i]	91.00	ppbdv @ 15% O_2	0.66	0.66	1.97	1.97	--	--
Naphthalene	1.30E-06	lb/MMBtu	3.90E-03	3.90E-03	0.01	0.01	--	--
PAH	2.20E-06	lb/MMBtu	6.60E-03	6.60E-03	0.02	0.02	--	--
Propylene Oxide [h]	2.90E-05	lb/MMBtu	0.09	0.09	0.26	0.26	--	--
Toluene	1.30E-04	lb/MMBtu	0.39	0.39	1.17	1.17	--	--
Xylenes	6.40E-05	lb/MMBtu	0.19	0.19	0.58	0.58	--	--
		Maximum Single HAP	**0.66**	**0.66**	**1.97**	**1.97**	**10**	**No**
		Total HAP	**2.26**	**1.61**	**4.83**	**4.83**	**25**	**No**

Calculations are based on parameters identified below.

Parameter	Value	Units
Fuel Usage	930.00	MW
Gas Turbine Firing Rate [j]	9,005.70	MMBtu/hr
Base Load Operating Time	1,975	hours/yr
Operating Time during Startup	25	hours/yr
Total Operating Time	2,000	hours/yr
Maximum Gas Consumption	18,011,400	MMBtu/yr
	17,658	MMSCF/yr
Natural Gas Btu Content	1,020	Btu/SCF
Exhaust Mass	385	DSCF/lb-mol
F Factor	8,710	DSCF/MMBtu
Startup time	0.2	hours
No. Startups per year	150	--
Turbine Firing Rate during Startup	2,702	MMBtu/hr
Startup Gas Consumption	67,543	MMBtu/yr
NO_x uncontrolled EF	3.20E-01	lb/MMBtu
Startup NO_x emissions	10.81	tpy
Pounds to Tons Conversion	2,000	lb/ton
Grains to Pounds Conversion	7,000	gr/lb
Hundred to Million Standard Cubic Feet Conversion	10,000	Ccf/MMscf
Formaldehyde Molecular Weight	30	lb/lb-mol
NH_3 Molecular Weight	17	lb/lb-mol

[a] Calculations include emissions for three (3) identical SGT6-8000H natural gas turbines at the site. The turbine EPNs are GT-1, GT-2, and GT-3.

[b] Emissions factors are from U.S. EPA AP-42 Chapter 3.1 (April 2000), Table 3.1-2.

[c] Emissions calculations conservatively assume PM_{Total}=PM_{10}=$PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions factors account for both the filterable and condensable portions of PM.

[d] The sulfur dioxide (SO_2) emissions factor is based on supplier data. The nitrogen oxides (NO_x) and ammonia (NH_3) emissions factors are based on manufacturer provided data. NO_x emissions account for SCR-warmup time using the uncontrolled emissions factor from AP-42 Table 3.1-1 and an estimated 150 startups per year, each lasting ten minutes. The turbine firing rate during startup time is approximately 30%.

[e] CO Emissions factor is are from U.S. EPA AP-42 Chapter 3.1 (April 2000), Table 3.1-1.

[f] Since the project does not result in Prevention of Significant Deterioration (PSD) requirements for any criteria pollutant, the project is not subject to PSD based solely on potential GHG emissions. [Utility Air Regulatory Group (UARG) v. EPA, 134 S. Ct. 2427, June 23, 2014]. The carbon dioxide equivalent (CO_2e) PTE is based off the following factors from 40 CFR §98 Table A-1 to Subpart A of Part 98 Global Warming Potentials:

Pollutant	Global Warming Potential
CO_2	1
CH_4	25
N_2O	298

[g] Emissions factors for HAP are from U.S. EPA AP-42 Chapter 3.1 (April 2000), Table 3.1-3.

[h] Emissions factor is below detection limit. Pollutant conservatively included at detection limit, individually and in total HAP emissions.

[i] Emissions limit from Table 1 of 40 CFR Part 63 Subpart YYYY, for the turbine emissions only.

[j] Higher Heating Value (HHV).

APPENDIX A -
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY FORMS

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:
ENGIE Flexible Generation NA LLC
B. Company Official Contact Information (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:)_____
Name: ***Laura Scott***
Title: ***Sr. Environmental Advisor***
Mailing Address: ***1360 Post Oak Blvd., Suite 400***
City: ***Houston***
State: ***TX***
ZIP Code: ***77056***
Telephone No.: ***281-924-9819***
Fax No.:
Email Address: ***laura.g.scott@engie.com***
All permit correspondence will be sent via email.
C. Technical Contact Information (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:)_____
Name: ***Margaret Campbell***
Title: ***Director, Business Development***
Company Name: ***ENGIE Flexible Generation NA LLC***
Mailing Address: ***1360 Post Oak Blvd., Suite 400***
City: ***Houston***
State: ***TX***
ZIP Code: ***77056***
Telephone No.: ***978-855-2043***
Fax No.:
Email Address: ***margaret.campbell@engie.com***
II. Facility and Site Information
A. Name and Type of Facility
Facility Name: ***GT-1, GT-2, and GT-3 natural gas-fired turbines at Perseus Facility***
Type of Facility: ☒ Permanent ☐ Temporary

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

II. Facility and Site Information *(continued)*
For portable units, please provide the serial number of the equipment being authorized below.
Serial No(s):
B. Facility Location Information
Street Address: ***CO Rd 48***
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).
From Houston, take I-69/US-59 S to US-77 S. Keep left to continue onto TX-91 Loop S, and then merge
onto US-77 S to Refugio/Corpus Christi. Take the I-37 S/US-77 S ramp to Corpus Christi/Kingsville,
and then take Exit 14 toward Kingsville/Brownsville. Continue onto I-69E S/US-77 S and take the US-
77 BUS exit toward TX-44 W/Robstown/Alice. Continue onto US-77 BUS S and turn right onto CO Rd
48.
City: ***Robstown***
County: ***Nueces***
ZIP Code: ***78380***
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): ***605985910***
Regulated Entity Number (RN): ***TBD***
D. TCEQ Account Identification Number (if known): ***N/A***
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: ***N/A***
Expiration Date: ***N/A***
F. Standard Permit Claimed: ***6005 – Electric Generating Unit***
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.

II. Facility and Site Information *(continued)*
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), and Standard Permit registration number(s), and associated effective date in the spaces provided below.
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s) and Effective Date(s)
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 ☐ GOP ☐ GOP application/revision (submitted or under APD review) ☒ N/A
☐ SOP application/revision (submitted or under APD review)

III.	**Fee Information** *(go to www.tceq.texas.gov/epay to pay online)*
A.	Fee Amount: ***$100***
B.	Voucher number from ePay: ***STEERS***
IV.	**Public Notice** *(if applicable)* **– *N/A***
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:	
Telephone No.:	
Fax No.:	
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

IV.	**Public Notice *(continued)*** *(if applicable) (continued)*	
If "Yes," list which language(s) are required by the bilingual program below?		
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
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 shutdown 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.		

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 project*.	
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 Sections 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): ***Upon Issuance***	
Projected Start of Operation (provide date): ***Upon Completion of Construction***	
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 the TCEQ or the Office of the Attorney General on behalf of the 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, 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): ***Laura Scott***
Signature (original signature required):
IX. Copies of the Registration
The 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/.

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 605985910		**RN**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☐ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:							
	City		**State**		**ZIP**		**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Perseus Generation

23. Street Address of the Regulated Entity: ***(No PO Boxes)***								
	City		**State**		**ZIP**		**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	From Houston, take I-69/US-59 S to US-77 S. Keep left to continue onto TX-91 Loop S, and then merge onto US-77 S to Refugio/Corpus Christi. Take the I-37 S/US-77 S ramp to Corpus Christi/Kingsville, and then take Exit 14 toward Kingsville/Brownsville. Continue onto I-69E S/US-77 S and take the US-77 BUS exit toward TX-44 W/Robstown/Alice. Continue onto US-77 BUS S and turn right onto CO Rd 48.

26. Nearest City	**State**	**Nearest ZIP Code**
Robstown	TX	78380

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	28.260738		**28. Longitude (W) In Decimal:**	-97.083737	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
28	15	38.6568	-97	5	1.453

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4911		221112	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Electric Power Generation

34. Mailing Address:	**Laura Scott**							
	1360 Post Oak Blvd., Suite 400							
	City	**Houston**	**State**	**TX**	**ZIP**	**77056**	**ZIP + 4**	

35. E-Mail Address:	**laura.g.scott@engie.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(281) 924-9819		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Troy Gayer	**41. Title:**	Managing Consultant

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(936 **)** 274-3169		**( ) -**	tgayer@all4inc.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	ENGIE Flexible Generation NA LLC	**Job Title:**	Sr. Environmental Advisor
Name *(In Print):*	Laura Scott	**Phone:**	**(** 281 **)** 924- **9819**
Signature:		**Date:**	

Texas Commission on Environmental Quality
Table 31
Combustion Turbines

Equipment Information	
Manufacturer: Siemens	
Model No.: SGT6-8000H	Serial No.: TBD
Emission Point Number (EPN) From Table 1(a): GT-1, GT-2, GT-3	

Turbine Application

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

☐ Other (specify):_____

Cycle

☒ Simple Cycle 2,000 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: 930 (Total Output) ☒ MW or ☐ hp

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

TBD

Fuel Data

Primary Fuels:

☒ Natural Gas (Sulfur content 0.2 gr S/100 dscf; HHV_____ 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):_____

Texas Commission on Environmental Quality
Table 31
Combustion Turbine

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).

Save Form Reset Form

APPENDIX B -
STANDARD PERMIT FOR ELECTRIC GENERATING UNITS APPLICABILITY

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.
GT-1, GT-2, and GT-3 are electric generating units installed or modified after the effective date of this standard permit and will 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.
This Application is not authorizing a boiler.

(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.

The electric generating units, GT-1, GT-2, and GT-3, are being registered in accordance with 30 TAC §116.611 using the current Form PI-1S.

(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.
In accordance with 30 TAC §116.614, this application contains payment for the $100 fee that accompanies 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. **GT-1, GT-2, and GT-3 will not operate until written approval of the standard permit is received 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).

Applicable records will be maintained and provided upon request.

(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.
As discussed in Section 4 of the Application narrative, GT-1, GT-2, and GT-3 will comply with all applicable requirements of 40 CFR Part 60, Subparts GG and 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.

Discussion of applicability and potential requirements of 30 TAC Chapter 117 and 30 TAC Chapter 114 is found in the State of Texas Regulatory Analysis section in Section 4 of the Application Narrative.

(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.

NO_x emissions from GT-1, GT-2, and GT-3 will be certified by the manufacturer, and the certification will be displayed on the name plate of the turbines. Test results will be provided upon request from TCEQ, and the turbines will only fire natural gas as certified by the manufacturer. For more information, the turbine specifications are found in Appendix C.

(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 shallbe 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 forunits 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 forthe non-electric output, and

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

This requirement is not applicable because exhaust heat from GT-1, GT-2, and GT-3 is not recovered for other processes.

(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.

GT-1, GT-2, and GT-3 will combust pipeline quality natural gas containing 0.2 grains per 100 dry standard cubic feet of sulfur. The natural gas will not contain waste oils or solvents.

(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 than250 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.

GT-1, GT-2, and GT-3 are greater than 10 MW; therefore, this requirement is not applicable.

(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.

GT-1, GT-2, and GT-3 are greater than 10 MW and will be authorized to operate more than 300 hours per year. ENGIE will comply with the 0.14 lb/ MWh emissions limitation.

(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 inWest 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).
GT-1, GT-2, and GT-3 will not fire any of the fuels described in this requirement; therefore, this requirement 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 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.
ENGIE will recertify GT-1, GT-2, and GT-3 as applicable.

(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 ambientair 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 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.

GT-1, GT-2, and GT-3 will comply with the NO_X emissions limit in subsection (4)(E)(i) of this Standard Permit; therefore, the NO_X emissions limit exceptions are not applicable.

APPENDIX C -
EQUIPMENT SPECIFICATION SHEETS

Technical data for the SGT6-8000H

Simple cycle power generation | Combined cycle power generation | Physical dimensions

Performance data for simple cycle power generation

Gross power output	310 MW
Fuel (examples)	Natural gas, LNG, sour gases, distillate oil, biodiesel, Arabian Super Light crude oil (ASL), kerosene, jet fuel, condensate. Other fuels on request
Frequency	60 Hz
Gross efficiency	40.4%
Gross heat rate	8920 kJ/kWh (8455 Btu/kWh)
Turbine speed	3,600 rpm
Pressure ratio	21.0 : 1
Exhaust mass flow	650 kg/s (1,433 lb/s)
Exhaust temperature	645°C (1,193°F)
NO_x emissions	≤ 25 ppmvd at 15% O_2 on fuel gas (without water injection for NO_x control), ≤ 42 ppmvd at 15% O_2 on fuel oil (with water injection for NO_x control)

NO_x emissions at 15% O_2 at ISO ambient conditions.