HO Clarke Generating, LLC

Change to Registration for Electric Generating Unit Standard Permit

Registration No. 153484

HO Clarke Generating
Houston, Harris County

Regulated Entity No. RN110947363
Customer Reference No. CN605746494

Submitted To:
Texas Commission on Environmental Quality
Air Division
P.O. Box 13087
Austin, Texas 78711-3087

February, 2025

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APPENDICES:

1.0 INTRODUCTION

HO Clarke Generating, LLC (HO Clarke) owns the HO Clarke Generating power plant (the Plant), comprised of eight natural gas-fired simple cycle combustion turbine generators (CTG) and ancillary equipment in Houston, Harris County, Texas. Construction and operation of these electric generating units (EGUs) are authorized under Texas Commission on Environmental Quality (TCEQ) Air Quality Standard Permit for Electric Generating Units (EGU Standard Permit), Registration No. 153484, issued on September 17, 2018, and last revised on October 27, 2020. This submittal for a change to the registration addresses implementation of peak firing and wet compression. This application has been prepared following guidance obtained from TCEQ staff in a pre-permit meeting held on October 31, 2024.

1.1 Permit Changes

Peak Firing and Wet Compression

For the LM6000 model combustion turbine, one of the primary parameters used by the control system to limit the maximum firing rate is the temperature at the inlet to the low pressure turbine (the “T48” temperature). The CTG efficiency and power output increase as the T48 temperature increases, but higher temperatures increase wear on turbine components, requiring shorter overhaul cycles. The base setpoint for T48 is 1,600 °F, and the turbine controls will limit the natural gas fuel flow to maintain the temperature below 1,600 °F. Operations of the CTG are affected by ambient conditions, such that during summer conditions the hot inlet air contributes to the T48 temperature, and the CTG controls have to limit the firing rate (and therefore reduce the megawatt power output) more than during a cold winter day. This loss in power output on hot days unfortunately coincides with some of the highest electricity demand. Peak firing is an option available to recover some of the lost power output on a limited basis.

Under peak firing, the T48 setpoint is increased slightly, allowing the CTG to burn more fuel and produce more power. At the maximum level of peak firing we anticipate using, up to 4 MW of power could be recovered. However, the increased wear significantly shortens the time between major overhauls, by up to an 8x factor. The increased cost of shortening the overhaul cycle means that peak firing will only be employed for a minimal number of hours during times of very high demand, where the high sales price of power justifies the cost of peak firing. Based on historical power pricing in the Houston market, we anticipate up to 250 hours per year of peak firing. Note that this is not an increase in the projected number of operating hours because at this price point, the units are expected to be dispatched anyway.

The CTGs utilize water injection technologies for power augmentation. Atomized water is injected into the airflow on the compressor side of the combustion turbine, increasing the mass flow. Rapid evaporation of the water spray cools the airflow, allowing higher inlet air mass flow rates. These actions result in the CTG recapturing output capacity that would be lost during hot summer conditions. Various water injection power augmentation technologies are available, differing primarily on the location where the injection occurs, the amount of water that can be injected, and the size of the water droplets. The units are currently authorized for two technologies, inlet fogging and Water Spray for Power Augmentation (WSPA). Wet

compression, an additional power augmentation option where water injection occurs at the high pressure compressor, will be added to the units. The water injection systems will be optimized to accommodate peak firing.

Short Term CTG Emission Rates

As noted above, CTG operations are impacted by ambient conditions. In the initial application, emission rate scenarios for short term hourly and annual emissions were calculated based on nominal CTG performance at ISO conditions (59 degrees Fahrenheit). However, the units can operate at higher heat input rates on cold winter days. Revised short term lb/hr emissions and calculations are shown on Table 1(a) and Table B-1, to account for winter weather conditions.

Operational Flexibility

The turbines at the site are divided into two groups, units CT-1 through CT-6 form one group, and units CT-7 and CT-8 the second group. To provide operational flexibility to meet market demands, such as in case of an extended outage of a particular turbine, we request annual emission cap limits for each turbine group. The cap limits are shown on the Table 1(a) and are calculated in Appendix B, Table B-1, as the sum of the emissions from each turbine's representative annual operating scenario. The annual caps do not allow for emissions greater than if each turbine had individual annual emission limits.

2.0 PROCESS DESCRIPTION

2.1 Combustion Turbine Generators

The Plant is comprised of eight natural gas-fired simple cycle combustion turbine generators and ancillary equipment. The combustion turbine model installed is the General Electric (GE) LM6000, nominally rated at 50 megawatts (MW) output. In each of the simple cycle units, ambient is drawn in through the air inlet and enters the compressor section of the CTG. Water injection systems are employed for power augmentation, injecting atomized water into the airflow on the compressor side of the unit, increasing the mass flow. Rapid evaporation of the water spray cools the airflow, allowing higher inlet air mass flow rates, resulting in the CTG recapturing output capacity that would be lost during hot summer conditions. Natural gas is mixed with the compressed inlet air and combusted in the combustor section of the CTG. A water injection system is used to reduce the emissions of NOx formed in the combustors. The hot combustion gases expand through the unit across turbine blades, causing rotation of the turbine shafts, which in turn drive the compressor sections and an electric generator, producing electricity. The hot exhaust then passes through an oxidation catalyst to reduce CO and VOC emissions and subsequently passes through a selective catalytic reduction (SCR) system to reduce NOx emissions before exiting though a stack (Emission Point Numbers [EPNs] CT-1 through CT-8). A process flow diagram is included at the end of this section.

2.2 Ancillary Equipment

The standard permit registration includes ancillary equipment at the site to support operation of the turbines. None of the ancillary equipment is modified by the proposed project. This equipment includes the following:

- A natural gas delivery system to fuel the CTGs;
- An ammonia delivery system for the SCR; and
- Lube oil and hydraulic oil systems.

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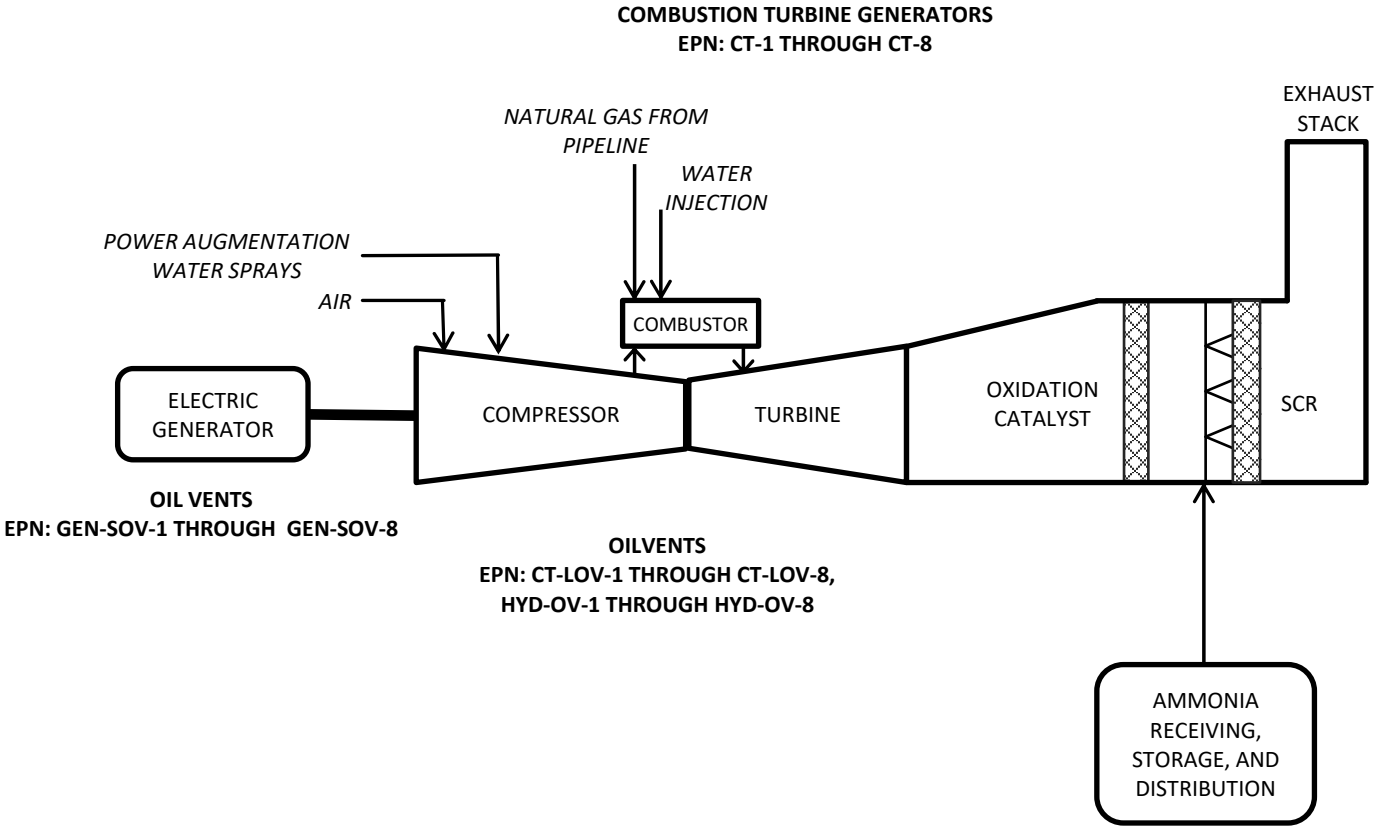

	HO CLARKE	**EGU Standard Permit Registration**
	PROCESS FLOW DIAGRAM	Drawn by: E Rapier / Date: 02/20/25
		Checked by: G Eghneim / Sheet: 1 of 1

3.0 COMPLIANCE WITH REQUIREMENTS OF 30 TAC §116.610 AND 116.615

The following discussion presents the requirements of 30 TAC §116.610 and §116.615 and explains how HO Clarke complies with each of the requirements.

3.1 §116.610. Applicability

(a) Under the TCAA, §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.

Per section 3(A) of the EGU Standard Permit, units that meet the conditions of the Standard Permit do not have to meet § 116.610(a)(1).

(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.

There is no pending revision to this subchapter.

(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 combustion turbines are subject to New Source Performance Standard (NSPS) in 40 CFR Part 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) and Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units). The units are able to comply with all applicable requirements.

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

There are no Subparts under 40 CFR Part 61 that are applicable to facilities affected by this registration.

(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)).

40 CFR Part 63, Subpart YYYY, does not apply to the combustion turbines because the site is not a major source of hazardous air pollutants.

(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.

The Plant is subject to Chapter 101, Subchapter H, Division 3. HO Clarke will obtain the necessary allowances and comply with the NO_X Mass Cap and Trade Program.

(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.

At the pre-permit meeting, TCEQ staff determined the proposed project should not be reviewed as a stand-alone project, but it should be aggregated with the previous permit revision that authorized power augmentation technologies, and a retrospective applicability review should be conducted. In a retrospective review, the previous determination of applicability or non-applicability of NNSR or PSD is reviewed again, using the modified project emissions, to ensure that the combined project would not have triggered major source NSR at the time of the previous permit issuance. Historically, there are two permit revisions that authorized power augmentation. The first, issued 09/18/2020, added inlet fogging to the first six turbines that were under construction at the site, and affected only turbines CT-1 through CT-6. The second, issued 10/27/2020, authorized the addition of two new turbines, units CT-7 and CT-8, along with their ancillary lube oil and other necessary systems. Turbines CT-7 and CT-8 included inlet fogging as part of their initial configuration. When these permit revisions were issued, the Houston area was designated as Serious for Nonattainment, with a Major Source threshold of 50 tpy and a Major Modification threshold of 25 tpy. Since the wet compression project that triggered the retrospective review affects all eight units, one combined retrospective review was conducted that captured both the 09/18/2020 and the 10/27/2020 revisions. The review demonstrates that NNSR and PSD permitting would not have been triggered, even when combining the historical projects.

In the current application, the proposed project is aggregated with the 2020 projects, and the retrospective review has been recalculated. Tables 1F and 2F present the project emissions and document that they are less than the VOC and

NOx major modification thresholds applicable to the retrospective review, therefore, NNSR is not triggered.

At the time of the retrospective review, the site was not a major source for NNSR for VOC (VOC PTE was 39.7 tpy). The combined projects are not a major source of VOC by themselves, and NNSR is therefore not triggered for VOC. The VOC emission limits are capped for operational flexibility.

At the time of the retrospective review, the site was a major source for NNSR for NOx (NOx PTE was 89.6 tpy). The combined project emissions increase for NOx is less than 25 tpy, which enables the netting within a project, or "Net to Zero" review option. A column has been added to the Table 2F for NOx to show the net project emissions. The review incorporates a 25% reduction in the ton per year NOx emission limits for the turbines, reducing the limits for CT-1 through CT-6 from 15.78 tpy to 11.84 tpy each, and reducing the limits for CT-7 and CT-8 from 12.38 tpy to 9.29 tpy each. The emission limits are then capped for operational flexibility. The project net emissions are less than zero, and NNSR is therefore not triggered for NOx.

The PSD Major Source threshold for a simple cycle power plant is 250 tons/yr of a PSD regulated pollutant pursuant to 40 CFR §52.21(b)(1)(i)(b). As documented on Table 1F, the Plant will not be a Major Source for PSD applicability purposes; therefore, PSD review is not triggered.

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

HO Clarke will not circumvent 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 project will not involve an affected source that is subject to Subchapter E.

3.2 §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 intent of the TCAA, including protection of health and property of the public.

(2) Standard permit representations. All representations with regard to construction plans, operating procedures, 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). If the facility remains eligible for a standard permit, the owner or operator of the facility shall notify the executive director of any change in conditions which will result in a 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 the original registration or any previous notification of a change in representations. Notice of changes in representations must be received by the executive director no later than 30 days after the change.

(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 (relating to Applicability) shall be administratively incorporated into that facility's permit at such time as the permit is amended or renewed.

(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.

(5) Start-up notification.

(A) The appropriate air program regional office of the commission and any other air pollution control program 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.

(6) Sampling requirements. If sampling of stacks or process vents is required, the standard permit holder shall contact the Office of Air Quality and any other air pollution control program 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.

(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.

(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 EPA, or any air pollution control program 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.

(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).

(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 is 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 program 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.

HO Clarke will adhere to these General Conditions and will operate the units authorized by the Standard Permit in compliance with the above subparagraphs.

4.0 COMPLIANCE WITH REQUIREMENTS OF THE EGU STANDARD PERMIT

The following discussion presents the requirements of the EGU Standard Permit and explains how HO Clarke complies with each of the requirements.

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.

This Standard Permit is being used to authorize eight EGUs that meet the requirements of the 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.

The units authorized by the Standard Permit are simple cycle gas turbines, not boilers.

(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.

This section contains no requirements.

(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.

A completed Form PI-1S is included in this registration package.

(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.

A registration fee of $900 has been submitted to the TCEQ.

(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.

HO Clarke will not begin construction until after receiving written approval from the TCEQ 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).

HO Clarke will maintain the applicable records.

(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 combustion turbines will meet the requirements of 40 CFR Part 60, Subpart 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.

HO Clarke will comply with the applicable requirements of 30 TAC Chapters 114 and 117.

(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.

The emissions certification will be displayed on the units and test results will be provided to the TCEQ upon request. The units will burn natural gas.

(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.

The combustion turbine units do not use combined heat and power.

(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 fuel combusted is natural gas containing no more than ten grains total sulfur per 100 dry standard cubic feet.

(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.

This section does not apply as the units are rated greater than 10 MW in output capacity.

(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.

The units operate more than 300 hours per year and meet the NO_X emission certification requirement of 0.14 lb/MWh when the units are operating at 80% and greater of the rated load.

(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).

This section does not apply as the units fire natural gas.

(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.

HO Clarke will comply with the recertification requirements of this subparagraph.

(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.

HO Clarke is aware that the hourly NO_X emission limit will not apply when the local ambient temperature 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.

HO Clarke will maintain the appropriate records if choosing to demonstrate compliance with the alternative NO_X emission standard. Maximum NO_X mass emissions during startup and shutdown of the turbines are presented in the emission calculations in Appendix B and are not considered subject to the lb/MWh normal operating limits specified in this paragraph because the units are in startup mode and not generating electricity for a portion of that time.

APPENDIX A TCEQ FORMS

- **FORM PI-1S**
- **TABLE 1(A)**
- **TABLE 1F**
- **TABLE 2F**

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:
HO Clarke Generating, LLC	
B.	Company Official Contact Information:
	☒ Mr.
	☐ Mrs.
	☐ Ms.
	☐ Other:_____
Name: Gus Eghneim	
Title: Senior Vice President Compliance Sustainability	
Mailing Address: 6246 McHard Rd	
City: Houston	
State: TX	
ZIP Code: 77053	
Telephone Number: 660-829-5100	
Fax Number:	
Email Address: geghneim@proenergyservices.com	
All permit correspondence will be sent via email.	
C.	Technical Contact Information
	☒ Mr.
	☐ Mrs.
	☐ Ms.
	☐ Other:_____
Name: Edward Rapier	
Title: Senior Environmental Engineer	
Company Name: PROENERGY Services, LLC	
Mailing Address: 6246 McHard Rd	
City: Houston	
State: TX	
ZIP Code: 77053	

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: 737-781-3708	
Fax Number:	
Email Address: erapier@proenergyservices.com	
II.	**Facility and Site Information**
A.	Name and Type of Facility
Facility Name: HO Clarke Generating	
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: 12584 Hiram Clarke Rd	
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: Houston	
County: Harris	
ZIP Code: 77045	
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): CN605746494	
Regulated Entity Number (RN): RN110947363	
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: 153484
Expiration Date: 09/17/2028
F. Standard Permit Claimed: 6005 - Electric Generating Unit
G. Previous Standard Exemption or PBR Registration Number:
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):
PBR Registration Number(s):
Standard Permit Registration Number(s):

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(Page 4)
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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

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III.	**Fee Information** ***(go to www.tceq.texas.gov/epay to pay online)***
A.	Fee Amount: $900
B.	Voucher number from ePay: Paid in STEERS at time of submittal.
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:	

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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

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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.	

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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): 03/2025
Projected Start of Operation (provide date): 05/2025
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): Gus Eghneim
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/.

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
Texas Commission on Environmental Quality

Date:	Permit No.:	Regulated Entity No.:	Area Name:	Customer Reference No.:
02/26/2025	153484	RN110947363	HO Clarke Generating	CN605746494

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-1	CT-1	Combustion Turbine 1	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

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Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-2	CT-2	Combustion Turbine 2	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
Texas Commission on Environmental Quality

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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-3	CT-3	Combustion Turbine 3	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-4	CT-4	Combustion Turbine 4	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

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Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-5	CT-5	Combustion Turbine 5	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-6	CT-6	Combustion Turbine 6	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -
CT-1 through CT-6	CT-1 through CT-6	Annual Emissions Cap for	NO_X	- - -	71.01
		Combustion Turbine 1 through	CO	- - -	58.50
		Combustion Turbine 6	VOC	- - -	23.88
			PM	- - -	92.58
			PM_{10}	- - -	92.58
			$PM_{2.5}$	- - -	92.58
			SO_2	- - -	38.76
			H_2SO_4	- - -	13.98
			$(NH_4)_2SO4$	- - -	18.84
			NH_3	- - -	80.70

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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-7	CT-7	Combustion Turbine 7	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-8	CT-8	Combustion Turbine 8	Normal Operating Emissions		
			NO_X	7.28	- - -
			CO	10.28	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	6.94	- - -
			MSS Emissions		
			NO_X	37.21	- - -
			CO	51.71	- - -
			VOC	3.60	- - -
			PM	5.88	- - -
			PM_{10}	5.88	- - -
			$PM_{2.5}$	5.88	- - -
			SO_2	1.43	- - -
			H_2SO_4	0.66	- - -
			$(NH_4)_2SO4$	0.88	- - -
			NH_3	13.16	- - -
CT-7 and CT-8	CT-7 and CT-8	Annual Emissions Cap for	NO_X		18.57
		Combustion Turbine 7 and Combustion Turbine 8	CO		29.72
			VOC		9.50
			PM		17.46
			PM_{10}		17.46
			$PM_{2.5}$		17.46
			SO_2		4.30
			H_2SO_4		1.84
			$(NH_4)_2SO4$		2.46
			NH_3		19.96

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Air Contaminant Data (Page 1)
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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
CT-LOV-1	CT-LO-1	Combustion Turbine 1 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-2	CT-LO-2	Combustion Turbine 2 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-3	CT-LO-3	Combustion Turbine 3 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-4	CT-LO-4	Combustion Turbine 4 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-5	CT-LO-5	Combustion Turbine 5 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-6	CT-LO-6	Combustion Turbine 6 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-7	CT-LO-7	Combustion Turbine 7 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
CT-LOV-8	CT-LO-8	Combustion Turbine 8 Lube Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-1	GEN-SO-1	Generator 1 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13

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EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
GEN-SOV-2	GEN-SO-2	Generator 2 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-3	GEN-SO-3	Generator 3 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-4	GEN-SO-4	Generator 4 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-5	GEN-SO-5	Generator 5 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-6	GEN-SO-6	Generator 6 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-7	GEN-SO-7	Generator 7 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
GEN-SOV-8	GEN-SO-8	Generator 8 Seal Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-1	HYD-O-1	Unit 1 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-2	HYD-O-2	Unit 2 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)
Texas Commission on Environmental Quality

Date:	Permit No.:	Regulated Entity No.:	Area Name:	Customer Reference No.:
02/26/2025	153484	RN110947363	HO Clarke Generating	CN605746494

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
HYD-OV-3	HYD-O-3	Unit 3 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-4	HYD-O-4	Unit 4 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-5	HYD-O-5	Unit 5 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-6	HYD-O-6	Unit 6 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-7	HYD-O-7	Unit 7 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
HYD-OV-8	HYD-O-8	Unit 8 Hydraulic Oil Vent	VOC	0.03	0.13
			PM	0.03	0.13
			PM_{10}	0.03	0.13
			$PM_{2.5}$	0.03	0.13
VOC-FUG	VOC-FUG	VOC Fugitives	VOC	0.70	3.09
NH3-FUG	NH3-FUG	Ammonia Fugitives	NH_3	5.02	22.00
CT-MSS	CT-MSS	ILE Turbine Maintenance	VOC	0.85	0.03
			PM	5.07	0.96
			PM_{10}	5.07	0.95
			$PM_{2.5}$	5.07	0.95
			NH_3	0.03	<0.01

Table 1(a) Emission Point Summary
Air Contaminant Data (Page 2)
Texas Commission on Environmental Quality

Date:	Permit No.:	Regulated Entity No.:	Area Name:	Customer Reference No.:
02/26/2025	153484	RN110947363	HO Clarke Generating	CN605746494

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

EPN	FIN	NAME	UTM Coordinates of Emission Point			Emission Point Discharge Parameters		Stack Exit Data			Fugitives		
			Zone	East (Meters)	North (Meters)	Building Height (ft.)	Height Above Ground (ft.)	Diameter (ft.)	Velocity (fps)	Temperature (°F)	Length (ft.)	Width (ft.)	Axis Degrees
CT-1	CT-1	Combustion Turbine 1	15	262,704	3,282,061		70	11.8	87.6	850			
CT-2	CT-2	Combustion Turbine 2	15	262,704	3,282,035		70	11.8	87.6	850			
CT-3	CT-3	Combustion Turbine 3	15	262,704	3,282,013		70	11.8	87.6	850			
CT-4	CT-4	Combustion Turbine 4	15	262,704	3,281,986		70	11.8	87.6	850			
CT-5	CT-5	Combustion Turbine 5	15	262,704	3,281,965		70	11.8	87.6	850			
CT-6	CT-6	Combustion Turbine 6	15	262,704	3,281,938		70	11.8	87.6	850			
CT-7	CT-7	Combustion Turbine 7	15	262,707	3,281,883		70	11.8	87.6	850			
CT-8	CT-8	Combustion Turbine 8	15	262,708	3,281,860		70	11.8	87.6	850			
CT-LOV-1	CT-LO-1	Combustion Turbine 1 Lube Oil Vent	15	262,688	3,282,056		20	0.003	0.003	115			
CT-LOV-2	CT-LO-2	Combustion Turbine 2 Lube Oil Vent	15	262,688	3,282,030		20	0.003	0.003	115			
CT-LOV-3	CT-LO-3	Combustion Turbine 3 Lube Oil Vent	15	262,688	3,282,008		20	0.003	0.003	115			
CT-LOV-4	CT-LO-4	Combustion Turbine 4 Lube Oil Vent	15	262,688	3,281,982		20	0.003	0.003	115			
CT-LOV-5	CT-LO-5	Combustion Turbine 5 Lube Oil Vent	15	262,688	3,281,959		20	0.003	0.003	115			
CT-LOV-6	CT-LO-6	Combustion Turbine 6 Lube Oil Vent	15	262,689	3,281,933		20	0.003	0.003	115			
CT-LOV-7	CT-LO-7	Combustion Turbine 7 Lube Oil Vent	15	262,691	3,281,878		20	0.003	0.003	115			
CT-LOV-8	CT-LO-8	Combustion Turbine 8 Lube Oil Vent	15	262,692	3,281,855		20	0.003	0.003	115			
GEN-SOV-1	GEN-SO-1	Generator 1 Seal Oil Vent	15	262,681	3,282,057		20	0.003	0.003	115			
GEN-SOV-2	GEN-SO-2	Generator 2 Seal Oil Vent	15	262,682	3,282,030		20	0.003	0.003	115			
GEN-SOV-3	GEN-SO-3	Generator 3 Seal Oil Vent	15	262,681	3,282,008		20	0.003	0.003	115			
GEN-SOV-4	GEN-SO-4	Generator 4 Seal Oil Vent	15	262,682	3,281,982		20	0.003	0.003	115			
GEN-SOV-5	GEN-SO-5	Generator 5 Seal Oil Vent	15	262,682	3,281,959		20	0.003	0.003	115			
GEN-SOV-6	GEN-SO-6	Generator 6 Seal Oil Vent	15	262,682	3,281,933		20	0.003	0.003	115			
GEN-SOV-7	GEN-SO-7	Generator 7 Seal Oil Vent	15	262,684	3,281,878		20	0.003	0.003	115			
GEN-SOV-8	GEN-SO-8	Generator 8 Seal Oil Vent	15	262,685	3,281,856		20	0.003	0.003	115			
HYD-OV-1	HYD-O-1	Unit 1 Hydraulic Oil Vent	15	262,688	3,282,056		20	0.003	0.003	115			
HYD-OV-2	HYD-O-2	Unit 2 Hydraulic Oil Vent	15	262,688	3,282,030		20	0.003	0.003	115			
HYD-OV-3	HYD-O-3	Unit 3 Hydraulic Oil Vent	15	262,688	3,282,008		20	0.003	0.003	115			
HYD-OV-4	HYD-O-4	Unit 4 Hydraulic Oil Vent	15	262,688	3,281,982		20	0.003	0.003	115			
HYD-OV-5	HYD-O-5	Unit 5 Hydraulic Oil Vent	15	262,688	3,281,959		20	0.003	0.003	115			
HYD-OV-6	HYD-O-6	Unit 6 Hydraulic Oil Vent	15	262,689	3,281,933		20	0.003	0.003	115			
HYD-OV-7	HYD-O-7	Unit 7 Hydraulic Oil Vent	15	262,691	3,281,878		20	0.003	0.003	115			
HYD-OV-8	HYD-O-8	Unit 8 Hydraulic Oil Vent	15	262,692	3,281,855		20	0.003	0.003	115			
VOC-FUG	VOC-FUG	VOC Fugitives	15	262,649	3,281,850						767	200	2.0
NH3-FUG	NH3-FUG	Ammonia Fugitives	15	262,652	3,281,851						760	190	2.0
CT-MSS	CT-MSS	ILE Turbine Maintenance	15	262,654	3,281,852						750	180	2.0

Table 1F
Air Quality Application Supplement
Texas Commission on Environmental Quality

Permit Number:	153484
Application Submittal Date:	02/26/2025
Company	HO Clarke Generating LLC
Regulated Entity Number:	RN110947363
Named Source (Y/N)	☐ Yes ☑ No
City	Houston
County:	Harris County
Permit Activity:	☐ New Source ☑ Modification (Retrospective review[1])

Complete for all pollutants with a project emission increase

Questions	Ozone VOC	Ozone NOx	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	H_2SO_4
Is nonattainment potentially applicable? (Y/N)	Yes	Yes	No	No	No	No	No	No
Is PSD potentially applicable? (Y/N)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Existing site PTE (tpy)[1]	39.7	89.6	88.2	114.2	114.2	114.2	43.1	15.8
Total project emissions increase (tpy from Table 2F)?[1]	11.0	-5.1	29.7	18.0	18.0	18.0	4.3	1.8
Is the existing site a major source? (Y/N)[1]	No	Yes	No	No	No	No	No	No
If not, is the project a major source by itself? (Y/N)[1]	No		No	No	No	No	No	No
If site is major source, is the project increase significant? (Y/N)		No						
Net contemporaneous change, including proposed project, from Table 3F (tpy)								
Major NSR Applicable? (Y/N)	No	No	No	No	No	No	No	No

If netting required, estimated start of construction date (MM/DD/YR):	
Beginning of Contemporaneous Period, 5 years prior to start of construction (MM/DD/YR):	
End of Contemporaneous Period, the start of operation date (MM/DD/YR):	

1. In a retrospective review, the values used for the site PTE and Major Source threshold rates are those that were used for the previous project's applicability review. At the time of the previous project (Registration No. 153484 revision date 10/27/2020) the major source threshold was 50 tpy for NOx or VOC, and the modification threshold was 25 tpy for NOx or VOC. The values for the proposed PTE on Table 2F, which are used to calculate the project emission increase, include emissions from the new project that triggered the retrospective review.

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**NOx**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]	Project Net Emissions
1	CT-1	CT-1	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
2	CT-2	CT-2	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
3	CT-3	CT-3	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
4	CT-4	CT-4	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
5	CT-5	CT-5	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
6	CT-6	CT-6	153484	0.00	15.78	11.84		-3.95		0.00	-3.95
7	CT-7	CT-7	153484	0.00	0.00	9.29		9.29		9.29	9.29
8	CT-8	CT-8	153484	0.00	0.00	9.29		9.29		9.29	9.29
9											
10											
11											
12											
									Total Project Emissions Increase	18.6	-5.1

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**VOC**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	3.98	3.98		0.00		0.00
2	CT-2	CT-2	153484	0.00	3.98	3.98		0.00		0.00
3	CT-3	CT-3	153484	0.00	3.98	3.98		0.00		0.00
4	CT-4	CT-4	153484	0.00	3.98	3.98		0.00		0.00
5	CT-5	CT-5	153484	0.00	3.98	3.98		0.00		0.00
6	CT-6	CT-6	153484	0.00	3.98	3.98		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	4.75		4.75		4.75
8	CT-8	CT-8	153484	0.00	0.00	4.75		4.75		4.75
9	CT-LO-7	CT-LOV-7	153484	0.00	0.00	0.13		0.13		0.13
10	CT-LO-8	CT-LOV-8	153484	0.00	0.00	0.13		0.13		0.13
11	GEN-SO-7	GEN-SOV-7	153484	0.00	0.00	0.13		0.13		0.13
12	GEN-SO-8	GEN-SOV-8	153484	0.00	0.00	0.13		0.13		0.13

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**VOC**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
13	HYD-O-7	HYD-OV-7	153484	0.00	0.00	0.13		0.13		0.13
14	HYD-O-8	HYD-OV-8	153484	0.00	0.00	0.13		0.13		0.13
15	VOC-FUG	VOC-FUG	153484	0.00	2.34	3.09		0.75		0.75
16	CT-MSS	CT-MSS	153484	0.00	0.02	0.03		0.01		0.01
17										
18										
19										
20										
21										
22										
23										
24										
									Total Project Emissions Increase	11.0

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**CO**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	9.75	9.75		0.00		0.00
2	CT-2	CT-2	153484	0.00	9.75	9.75		0.00		0.00
3	CT-3	CT-3	153484	0.00	9.75	9.75		0.00		0.00
4	CT-4	CT-4	153484	0.00	9.75	9.75		0.00		0.00
5	CT-5	CT-5	153484	0.00	9.75	9.75		0.00		0.00
6	CT-6	CT-6	153484	0.00	9.75	9.75		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	14.86		14.86		14.86
8	CT-8	CT-8	153484	0.00	0.00	14.86		14.86		14.86
9										
10										
11										
12										
									Total Project Emissions Increase	29.7

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**SO2**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	6.46	6.46		0.00		0.00
2	CT-2	CT-2	153484	0.00	6.46	6.46		0.00		0.00
3	CT-3	CT-3	153484	0.00	6.46	6.46		0.00		0.00
4	CT-4	CT-4	153484	0.00	6.46	6.46		0.00		0.00
5	CT-5	CT-5	153484	0.00	6.46	6.46		0.00		0.00
6	CT-6	CT-6	153484	0.00	6.46	6.46		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	2.15		2.15		2.15
8	CT-8	CT-8	153484	0.00	0.00	2.15		2.15		2.15
9										
10										
11										
12										
									Total Project Emissions Increase	4.3

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	15.43	15.43		0.00		0.00
2	CT-2	CT-2	153484	0.00	15.43	15.43		0.00		0.00
3	CT-3	CT-3	153484	0.00	15.43	15.43		0.00		0.00
4	CT-4	CT-4	153484	0.00	15.43	15.43		0.00		0.00
5	CT-5	CT-5	153484	0.00	15.43	15.43		0.00		0.00
6	CT-6	CT-6	153484	0.00	15.43	15.43		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	8.73		8.73		8.73
8	CT-8	CT-8	153484	0.00	0.00	8.73		8.73		8.73
9	CT-LO-7	CT-LOV-7	153484	0.00	0.00	0.13		0.13		0.13
10	CT-LO-8	CT-LOV-8	153484	0.00	0.00	0.13		0.13		0.13
11	GEN-SO-7	GEN-SOV-7	153484	0.00	0.00	0.13		0.13		0.13
12	GEN-SO-8	GEN-SOV-8	153484	0.00	0.00	0.13		0.13		0.13

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
13	HYD-O-7	HYD-OV-7	153484	0.00	0.00	0.13		0.13		0.13
14	HYD-O-8	HYD-OV-8	153484	0.00	0.00	0.13		0.13		0.13
15	CT-MSS	CT-MSS	153484	0.00	0.72	0.96		0.24		0.24
16										
17										
18										
19										
20										
21										
22										
23										
24										
									Total Project Emissions Increase	18.0

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM10**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	15.43	15.43		0.00		0.00
2	CT-2	CT-2	153484	0.00	15.43	15.43		0.00		0.00
3	CT-3	CT-3	153484	0.00	15.43	15.43		0.00		0.00
4	CT-4	CT-4	153484	0.00	15.43	15.43		0.00		0.00
5	CT-5	CT-5	153484	0.00	15.43	15.43		0.00		0.00
6	CT-6	CT-6	153484	0.00	15.43	15.43		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	8.73		8.73		8.73
8	CT-8	CT-8	153484	0.00	0.00	8.73		8.73		8.73
9	CT-LO-7	CT-LOV-7	153484	0.00	0.00	0.13		0.13		0.13
10	CT-LO-8	CT-LOV-8	153484	0.00	0.00	0.13		0.13		0.13
11	GEN-SO-7	GEN-SOV-7	153484	0.00	0.00	0.13		0.13		0.13
12	GEN-SO-8	GEN-SOV-8	153484	0.00	0.00	0.13		0.13		0.13

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM10**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
13	HYD-O-7	HYD-OV-7	153484	0.00	0.00	0.13		0.13		0.13
14	HYD-O-8	HYD-OV-8	153484	0.00	0.00	0.13		0.13		0.13
15	CT-MSS	CT-MSS	153484	0.00	0.71	0.95		0.24		0.24
16										
17										
18										
19										
20										
21										
22										
23										
24										
									Total Project Emissions Increase	18.0

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM2.5**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	15.43	15.43		0.00		0.00
2	CT-2	CT-2	153484	0.00	15.43	15.43		0.00		0.00
3	CT-3	CT-3	153484	0.00	15.43	15.43		0.00		0.00
4	CT-4	CT-4	153484	0.00	15.43	15.43		0.00		0.00
5	CT-5	CT-5	153484	0.00	15.43	15.43		0.00		0.00
6	CT-6	CT-6	153484	0.00	15.43	15.43		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	8.73		8.73		8.73
8	CT-8	CT-8	153484	0.00	0.00	8.73		8.73		8.73
9	CT-LO-7	CT-LOV-7	153484	0.00	0.00	0.13		0.13		0.13
10	CT-LO-8	CT-LOV-8	153484	0.00	0.00	0.13		0.13		0.13
11	GEN-SO-7	GEN-SOV-7	153484	0.00	0.00	0.13		0.13		0.13
12	GEN-SO-8	GEN-SOV-8	153484	0.00	0.00	0.13		0.13		0.13

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**PM2.5**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
13	HYD-O-7	HYD-OV-7	153484	0.00	0.00	0.13		0.13		0.13
14	HYD-O-8	HYD-OV-8	153484	0.00	0.00	0.13		0.13		0.13
15	VOC-FUG	VOC-FUG	153484	0.00	2.34	3.09		0.75		0.75
16	CT-MSS	CT-MSS	153484	0.00	0.02	0.02		0.00		0.00
17										
18										
19										
20										
21										
22										
23										
24										
									Total Project Emissions Increase	18.0

Table 2F
Project Emissions Increase Supplement
Texas Commission on Environmental Quality

Pollutant[1]:	**H_2SO_4**
Permit:	No baseline period as this is a retrospective review for before the facility had two
Baseline Period (Month and Year):	years of operation. Baseline emissions for CT-1 to CT-6 are set to the permit
To Baseline Period (Month and Year):	allowables because the facilities had less than two years of operation.

New, Affected, or Modified Facilities[2]

Item Number	FIN	EPN	Permit Number	Actual Emissions[3]	A Baseline Emissions[4]	B Proposed Potential to Emit Emissions[5]	C Projected Actual Emissions[6]	Difference, (B-A) or (C-A)[7]	Correction[8]	Project Emissions Increases[9]
1	CT-1	CT-1	153484	0.00	2.33	2.33		0.00		0.00
2	CT-2	CT-2	153484	0.00	2.33	2.33		0.00		0.00
3	CT-3	CT-3	153484	0.00	2.33	2.33		0.00		0.00
4	CT-4	CT-4	153484	0.00	2.33	2.33		0.00		0.00
5	CT-5	CT-5	153484	0.00	2.33	2.33		0.00		0.00
6	CT-6	CT-6	153484	0.00	2.33	2.33		0.00		0.00
7	CT-7	CT-7	153484	0.00	0.00	0.92		0.92		0.92
8	CT-8	CT-8	153484	0.00	0.00	0.92		0.92		0.92
9										
10										
11										
12										
									Total Project Emissions Increase	1.8

APPENDIX B EMISSION CALCULATONS

Table B-1
Combustion Turbine Emissions
HO Clarke Generating

Parameter	Units	
Operating Parameters		
Potential Max CT Load	MW	52
Nominal CT Load	MW	50
Potential Max CT Max Heat Input	MMBtu/hr	510
Nominal CT Heat Input	MMBtu/hr	475
Typical SU Duration	min	15
Typical SD Duration	min	10
Potential Hourly SUSD Events	events/hr	2
Typical Annual SUSD Events	events/yr	0
Fuel Sulfur Content	gr S/100 dscf	1
Fuel Heat Content	Btu/scf	1020
Oxidation of SO2	%	30%
Maximum Emissions From Peak Firing Operation, Potential Max Load		
NOx basis, 24-hr average	lb/MW-hr	0.14
NOx, 24-hr average	lb/hr	7.28
CO basis, 24-hr average	ppmvd @ 15% O2	9
CO, 24-hr average	lb/hr	10.28
VOC basis, 3-hr average	ppmvd @ 15% O2	2
VOC, 3-hr average	lb/hr	3.60
NH3 basis, 3-hr average	ppmvd @ 15% O2	10
NH3, 3-hr average	lb/hr	6.94
SO2	lb/hr	1.43
H2SO4	lb/hr	0.66
(NH4)2SO4	lb/hr	0.88
PM, total	lb/hr	5.88
Average Emissions From Normal Operation, Nominal Load		
NOx basis, 24-hr average	ppmvd @ 15% O2	4
NOx, 24-hr average	lb/hr	7.00
CO basis, 24-hr average	ppmvd @ 15% O2	9
CO, 24-hr average	lb/hr	9.58
VOC basis, 3-hr average	ppmvd @ 15% O2	2
VOC, 3-hr average	lb/hr	3.36
NH3 basis, 3-hr average	ppmvd @ 15% O2	10
NH3, 3-hr average	lb/hr	6.46
SO2, annual average	lb/hr	1.33
H2SO4, annual average	lb/hr	0.61
(NH4)2SO4, annual average	lb/hr	0.82
PM, total, annual average	lb/hr	5.82

Table B-1
Combustion Turbine Emissions
HO Clarke Generating

SUSD Emissions, Prorated Hourly Rates

NOx SUSD	lbs/event	18
NOx, prorated	lb/hr	37.21
CO SUSD	lbs/event	25
CO, prorated	lb/hr	51.71
VOC SUSD	lbs/event	1.52
VOC, prorated	lb/hr	3.64
NH3 SUSD	lbs/event	6
NH3, prorated	lb/hr	13.16

Notes:
Emission calculations are for one turbine only.
Heat input, MW load, ppm and lb/MMBtu emissions factors, and annual average lb/hr rates are represented as bases for calculation only and are not represented as operational or emission limits. Acheivable operating levels and emissions will vary based on ambient conditions and turbine condition.
VOC emissions are total VOC and include formaldehyde.

Table B-2
Gas Turbine Emission Summary
HO Clarke Generating

Approximate Annual Turbine Normal Operating Hours, Per Turbine, CT-1 to CT-6	7,500
Approximate Annual Hours of SUSD Operations, Per Turbine, CT-1 to CT-6 [1]	300
Approximate Annual Turbine Normal Operating Hours, Per Turbine, CT-7 and CT-8	2,700
Approximate Annual Hours of SUSD Operations, Per Turbine, CT-7 and CT-8 [1]	300

Pollutant	Maximum Emissions (lbs/hr)	Typical Emissions (lbs/hr)	Startup/Shutdown Emissions (lbs/hr)	Annual Emissions Per Turbine, CT-1 to CT-6 (tons/yr)	Annual Emissions Cap, Turbines CT-1 to CT-6 (tons/yr)	Annual Emissions Per Turbine, CT-7 and CT-8 (tons/yr)	Annual Emissions Cap, Turbines CT-7 and CT-8 (tons/yr)
NO_X	7.28	7.00	37.21	11.84	71.01	9.29	18.57
CO	10.28	9.58	51.71	9.75	58.50	14.86	29.72
VOC	3.60	3.36	3.64	3.98	23.88	4.75	9.50
$PM/PM_{10}/PM_{2.5}$	5.88	5.82	5.88	15.43	92.58	8.73	17.46
SO_2	1.43	1.33	1.43	6.46	38.76	2.15	4.30
H_2SO_4	0.66	0.61	0.66	2.33	13.98	0.92	1.84
$(NH_4)_2SO_4$	0.88	0.82	0.88	3.14	18.84	1.23	2.46
NH_3	6.94	6.46	13.16	13.45	80.70	9.98	19.96

Notes:
1. The approximate number of annual operating hours and hours in startup/shutdown are estimates for a basis of calculation and are not intended to be annual limits for compliance purposes.