FEDERAL OPERATING PERMIT - TECHNICAL REVIEW SUMMARY
SITE OPERATING PERMIT (SOP) INITIAL ISSUANCE

Permit #:	**O4473**	Company:	**Brotman II, LLC**
Project #:	**35342**	Site:	**Brotman Power Station**
Regulated Entity #:	**RN111170924**	Application Area:	**Brotman II**
Region:	**12**	Customer #:	**CN606089357**
NAICS Code:	**221112**	County:	**Brazoria**
Permit Reviewer:	**Kyle Murray**	NAICS Name:	**Fossil Fuel Electric Power Generation**

SITE INFORMATION

Physical Location: 1920 County Road 52
Nearest City: Rosharon
Major Pollutants: NOX, VOC
Additional FOPs: O4435

PROJECT SUMMARY

Brotman II, LLC (Brotman) owns two natural gas-fired simple cycle combustion turbines and ancillary equipment at the Brotman Power Station (the Plant), an electric generating plant near Rosharon, Brazoria County, Texas. The site is a major source of emissions, and the turbines are affected units under the Acid Rain Program, so the site is subject to 30 TAC Chapter 122 and is required to obtain a Federal Operating Permit (FOP). An initial issuance application for this permit area was received by TCEQ on July 11, 2023. Significant emission sources at the site include stationary turbines, stationary vents and a loading/unloading operation, which are subject to State and/or Federal regulations. GRPTURBII is subject to both Compliance Assurance Monitoring (CAM) and Periodic Monitoring (PM), and the requirements are identified in the FOP. The FOP includes general and special terms and conditions and unit-specific applicable requirements which were identified using information provided by the applicant in various forms (OP-AR1, OP-SUM, OP-REQ1, OP-REQ2, OP-REQ3, OP-UA4, OP-UA11, OP-UA15, OP-MON, and OP-PBRSUP). This project was originally assigned to another permit reviewer and was transferred to the current reviewer on June 12, 2024.

The company indicated on Form OP-REQ1 that the site has emission units in the application area subject to the Acid Rain Program and the Cross-State Air Pollution Rule (CSAPR) Trading Program.

PROCESS DESCRIPTION

Combustion Turbines: Brotman II is comprised of 2 natural gas-fired simple cycle combustion turbines and ancillary equipment. The turbine model that will be installed is the General Electric (GE) LM6000, nominally rated at 50 megawatts (MW) output. Each of the simple cycle turbines compresses ambient air as it enters the turbine. Mechanical energy generated by the turbine shaft drives the inlet compressor. Inlet fogging may be utilized to condition the inlet air to replicate cold wet days by decreasing the temperature and increasing the humidity of the ambient air, resulting in higher turbine output and efficiency on warm days. Natural gas is mixed with the compressed combustion air and combusted in the combustor section of the turbine unit. A water injection system is used to reduce the emissions of NOx formed in the combustion section of the turbine. The hot combustion gases expand through the turbine across turbine blades, causing rotation of the turbine shaft, which converts mechanical energy to electrical energy by driving an electric generator. The hot exhaust then passes through an oxidation catalyst to reduce carbon monoxide (CO) and volatile organic compound (VOC) emissions and subsequently passes through a selective catalytic reduction (SCR) system to reduce NOx emissions before exiting though a stack (Unit IDs CT-7 and CT-8).

Oil Systems: The turbines and generators include closed-loop lube oil recirculation systems to lubricate the moving parts of each turbine and generator. Additionally, the turbines include a hydraulic fluid service. Oil vapor (constituting VOC) and oil mist (constituting particulate matter (PM)) emissions are generated by oil vaporization resulting from heating of lube oil in the turbines and subsequent condensation of droplets when the vapor is cooled in the cooler zones of the storage reservoir compartment. Lube oil mist emissions from the reservoir compartment are controlled by a mist eliminator exhausted through a dedicated reservoir vent (Unit IDs CT-LOV-7 and CT-LOV-8). Similarly, VOC and PM emissions have been quantified for the generator lube oil systems (Unit IDs GEN-SOV-7 and GEN-SOV-8) and hydraulic oil systems (Unit IDs HYD-OV-7 and HYD-OV-8).

General Maintenance: Operations at the Plant include a variety of general maintenance activities, some of which may have potentially applicable requirements. Maintenance painting (ID PAINTING) and hand cleaning using solvents (ID SOLVCLEAN) have been identified and addressed in this application.

Other Equipment:
One high-pressure 15,000-gallon ammonia (NH3) solution storage tank is located at the site. An aqueous solution containing 19 percent NH3 is delivered by tanker truck. The NH3 storage tank maintains working pressure sufficient to prevent working and breathing loss emissions to the atmosphere. Piping components associated with the tank and the distribution of NH3 throughout the system are sources of fugitive emissions.

Natural gas is delivered to the site via pipeline and then metered and piped to the combustion turbines. The lube oil and hydraulic oil systems receive recirculated oil through piping from oil reservoirs. The piping components in natural gas and oil service are fugitive sources of VOC emissions.

TECHNICAL REVIEW

Permit Content Summary

1. Was Periodic Monitoring (PM) required and included in the permit? ..... Yes
2. Was Compliance Assurance Monitoring (CAM) required and included in the permit? ..... Yes
3. Was case-by-case PM or CAM included in the permit? ..... Yes
4. Was a permit shield requested? ..... Yes
5. If a permit shield was requested, was any permit shield request denied? ..... No
6. Identify if the following are applicable for this project:
    (a) Manually-built applicable requirements ..... Yes
    (b) Customized Special Terms and Conditions ..... Yes
    (c) Manual changes to the IMS-generated applicable requirements ..... Yes
    (d) Alternate means of compliance for any emission unit/source at the site ..... No
7. Is the site subject to the requirements of 40 CFR Part 72 (Acid Rain Permit)? ..... Yes
8. Did the applicant's review/comments on the working draft permit result in changes to the permit content? ..... Yes
9. Will the draft permit be sent to public notice with unresolved issues (i.e., disagreements with applicant)? ..... No

Permit reviewer notes:

PM Option No. PM-P-030 was included in the FOP to demonstrate compliance for GRPTURBII for 30 TAC Chapter 111, Visible Emissions.

GRPTURBII (unit IDs CT-7 and CT-8) has case-by-case CAM for the CO and NOx limits in Standard Permit Registration No. 166899 that utilizes a continuous emission monitoring system (CEMS) to measure and record the carbon monoxide (CO), nitrogen oxides (NOx), and oxygen concentrations in the exhaust stream. CO concentrations are to be measured four times per hour on a rolling 24-hour and 12-month averaging period and are calculated in units of lb/hr and tons/year, respectively. The CO deviation limits were set to the value of the hourly CO emission limits (normal and MSS operation) and annual CO emission limit from the standard permit registration. NOx concentrations are also to be measured four times per hour on a rolling 24 hour and 12 month averaging period. NOx emissions shall be calculated in units of lb/MWh and lb/hr for the 24-hour averaging period and in tons/year for the 12-month averaging period. The lb/MWh NOx emission limit is from the standard permit itself and the deviation limit was set to that value. The lb/hr and tpy NOx emission limits are from the standard permit registration and the deviation limits were set to those values. These CAM requirements were manually built on the permit side of the IMS due to 30 TAC Chapter 116, Standard Permits being the applicable regulatory requirement.

GRPTURBII has case-by-case PM for the ammonia (NH3) limit in 30 TAC Chapter 117. The applicant calculates ammonia emissions in accordance with 30 TAC §117.8130(1) using a mass balance between input ammonia and ammonia reacted. The rule language does not include a frequency for conducting this monitoring so the PM satisfies that by specifying this shall be calculated on an hourly basis.

All case-by-case monitoring requirements were reviewed and approved by PM/CAM specialist Carolyn Maus.

The applicant's request for Permit Shields was reviewed and granted.

Several updates were received over the course of the project, as well as with the applicant's comments on the WDP on 9/03/2024. The response to the WDP also led to several changes to the document:
The minutes of the latitude on the WDP were updated to match the latitude given on the OP-1.
Monitoring and Testing citation §60.4350(e) was removed from the NSPS KKKK requirements for GRPTURBII as the parameters listed are not required to be monitored when complying with the ppm concentration standard. This manual change was approved by technical specialist, Carolyn Maus.
Periodic monitoring was added for NH3 for GRPTURBII for 30 TAC Chapter 117 (discussed above). This had been submitted and approved in technical review but was not included until the applicant corrected their NH3 Monitoring code on the unit attribute form to be consistent with the OP-MON information.
An updated OP-UA11, Table 7a, was provided to add NSPS TTTT applicable requirements to the permit since it was left out of the initial application. An OP-REQ3 form was provided by the applicant for provisional requirements.

GRPTURBII (Unit IDs CT-7 and CT-8) is subject to the Acid Rain Permit requirements which were updated in the special terms and conditions and included in the FOP.

The customized special terms and conditions added to the permit are as follows:
Term No. 10 (IMS term B.142 – NSR Requirements Intro (PBRSUP))
Term No. 22 (IMS term L.162 - Acid Rain Intro)
Term No. 23 (IMS term R.164 - CSAPR Units Head)
Term No. 23.B.(i)(1) (IMS term R.164.B.i.2 – CEMS & HT INPT & PT75 APPD)

The applicant approved the WDP and provided an OP-CRO1 to certify all previous updates on 10/02/2024.

Statement of Basis
A Statement of Basis sets forth the legal and factual basis for the applicable requirements that are included in the FOP. A Statement of Basis was prepared for this project and is included in the permit file.

Compliance History Review
1. In accordance with 30 TAC Chapter 60, the compliance history was reviewed on October 2, 2024.
   Site rating: Unclassified Company rating: Unclassified
   (High < 0.10; Satisfactory ≥ 0.10 and ≤ 55; Unsatisfactory > 55)
2. Has the permit changed on the basis of the compliance history or site/company rating?..... No

Permit reviewer notes:
The company that owns this permit area is new, and the site has not yet been operating long enough to have sufficient compliance history data to provide a rating.

Site/Permit Area Compliance Status Review
1. Were there any out-of-compliance units listed on Form OP-ACPS?..... No
2. Is a compliance plan and schedule included in the permit?..... No

Delinquent Fee Check
1. The delinquent fee check was performed on 10/02/2024.
2. Were there any delinquent fees owed? ..... No

Public Notice Information
1. Were comments received from the applicant after the draft permit was mailed and before Public Notice was published?..... No
2. Was a revised draft permit or public notice authorization package (PN-Errata) sent for any reason?..... No
3. Publication date: January 2, 2025 Newspaper name: Lone Star TX
4. Was bilingual public notice published?..... Yes
   Publication date: January 2, 2025 Newspaper name: El Perico
5. Were comments received during Public Notice period?..... No
   (a) Was a public hearing requested?..... No
   (b) Was a public hearing held?..... No
   (c) Was the public hearing request withdrawn?..... No
   (d) Was permit content changed as a result of any public comments?..... No
6. Was re-publication necessary?..... No

Permit reviewer notes:
The CID was checked on 02/10/2025 to verify no public comments.

EPA Review

1. Did EPA comment on the draft permit?..... No
2. Was a separate NOPP - Notice of Proposed Permit sent to the EPA?..... No
   If yes, did the EPA comment on the proposed permit?..... N/A
3. Were any changes made to the permit after the EPA Review Period?..... No
   If yes, were these changes made within the 60 day Public Petition Period?..... N/A

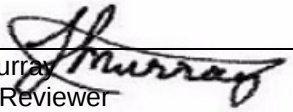
Permit reviewer notes:
The CID was checked on 03/03/2025 to verify no EPA comments.

IMPORTANT MILESTONES

Milestone (Standard)	Start Date	End Date
Date Application Received by TCEQ	07/11/2023	
Date Project Received by Engineer #1	07/26/2023	
Date Project Received by Engineer #2	06/12/2024	
Technical Review Period	11/06/2023	10/02/2024
Working Draft Permit Reviewed by Applicant	08/08/2024	09/03/2024
Date PNAP/Draft Permit Mailed	12/06/2024	
Public Notice Comment Period	01/02/2025	02/03/2025
EPA Review Period	01/14/2025	02/28/2025
Date Sign Posting Certification Received	02/11/2025	

Milestone (Optional)	Start Date	End Date
Deficiency Cycle 1		
Deficiency Cycle 2		
Request for Comments on Compliance Plan		
Date Comment on Draft Permit Received from Public		
Date comment on Draft Permit Received from EPA		
Date Public Hearing Requested		
Date Public Hearing Held		

EFFECTIVE PERMIT ISSUANCE DATE: March 12, 2025



03/05/2025

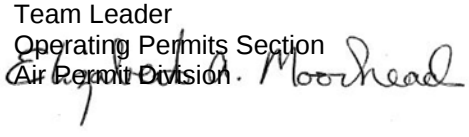
Kyle Murray
Permit Reviewer
Operating Permits Section
Air Permits Division

Date

03/05/2025

Elizabeth Moorhead
Team Leader
Operating Permits Section
Air Permit Division

Date



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