

Construction Permit Source Analysis & Technical Review

Company	Southwestern Electric Power Company	Permit Number	178948
City	Hallsville	Project Number	387979
County	Harrison	Regulated Entity Number	RN100214287
Project Type	Initial	Customer Reference	CN600126767
Project Reviewer	Ariel Ramirez	Number	
Site Name	Hallsville Natural Gas Plant	Received Date	January 24, 2025

Project Overview

American Electric Power and Southwestern Electric Power Company (AEP SWEPCO) submitted an expedited initial New Source Review (NSR) permit application proposing to authorize a natural gas-fired simple cycle combustion turbine facility located in Hallsville, Harrison County. The facility will consist of two natural gas-fired simple cycle combustion turbines and associated auxiliary equipment, including two fuel gas heaters and one emergency engine, used to produce electricity. Maintenance, Startup, and Shutdown (MSS) will be authorized by this permit.

Emission Summary

Air Contaminant	Proposed Allowable Emission Rates (tpy)
VOC	21.49
NO _x	244.66
CO	243.02
PM	20.37
PM ₁₀	20.37
PM _{2.5}	20.37
SO ₂	9.29
H ₂ SO ₄	2.14

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	February 5, 2025
Site rating & classification:	0.00 / High
Company rating & classification:	0.00 / High
Has the permit changed on the basis of the compliance history or rating?	No
Did the Regional Office have any comments? If so, explain.	No

Public Notice Information

Requirement	Date
Legislator letters mailed	2/3/25
Date 1 st notice published	3/5/25
Publication Name: Marshall News Messenger	
Pollutants: carbon monoxide, hazardous air pollutants, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide	
Date 1 st notice Alternate Language published	3/5/25
Publication Name (Alternate Language): La Opinion	
1 st public notice tearsheet(s) received	3/10/25

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1 st public notice affidavit(s) received	3/10/25
1 st public notice certification of sign posting/application availability received	4/17/25
SB709 Notification mailed	2/5/25; re-notice 6/30/25
Date 2 nd notice published	7/30/25
Publication Name: Marshall News Messenger	
Pollutants: carbon monoxide, hazardous air pollutants, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less, sulfur dioxide and sulfuric acid	
Date 2 nd notice published (Alternate Language)	8/6/25
Publication Name (Alternate Language): La Opinion	
2 nd public notice tearsheet(s) received	8/7/25
2 nd public notice affidavit(s) received	8/7/25
2 nd public notice certification of sign posting/application availability received	9/10/25

Public Interest

Number of comments received	0
Number of meeting requests received	0
Number of hearing requests received	0
Date meeting held	N/A
Date response to comments filed with OCC	N/A
Date of SOAH hearing	N/A

Federal Rules Applicability

Requirement

Subject to NSPS? **Yes**

Subparts **A, IIII, & KKKK**

Subject to NESHAP?

Subparts **&**

Subject to NESHAP (MACT) for source categories? **Yes**

Subparts **A & ZZZZ**

Nonattainment review applicability: The site is located in Harrison County, currently designated as attainment or unclassified for all criteria pollutants and precursors; therefore, nonattainment review does not apply.

PSD review applicability: AEP owned and SWEPCO operated a power generation plant previously authorized for the now retired coal-fired unit under TCEQ NSR Permit nos. 6269 and 6270, Title V Permit O31, and various registered and unregistered Permit by Rule (PBR) authorizations. The unit retired in March 2023 and the Applicant represented all associated permits either have been or will be voided. The previous coal-fired unit was an existing major source with respect to the PSD program; however, total site emission rates for each pollutant are now less than the PSD major source threshold; therefore, the site is an existing unnamed minor PSD site. The site does not have the potential to emit greater than 250 tpy for any contaminant; therefore, PSD review does not apply.

Title V Applicability - 30 TAC Chapter 122 Rules

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Requirement

Title V applicability: The plant is a major source with respect to the Title V program, and the Applicant represented they will submit a Title V application for the proposed project.

Periodic Monitoring (PM) applicability: The site is a major source for Title V and is subject to the 30 TAC 122 periodic monitoring requirements. The following provisions for monitoring related to this amendment project are included in the special conditions:

- Fuel sampling to determine percent conversion of sulfur in fuel to SO₂.
- Quarterly visible emissions observations.
- Turbine stack testing for NO_x, CO, VOC, PM₁₀, SO₂, and O₂.
- CEMS for NO_x, CO, and O₂ from each turbine exhaust stack.
- Recordkeeping of planned startups, shutdowns, and other planned maintenance activities.
- Recordkeeping of the amount of natural gas fired monthly in each CTG.
- Recordkeeping of monthly storage tank services and throughputs
- Records of hours, date, time, and duration of diesel fired emergency generator and monthly diesel fuel deliveries and fuel quantities.
- Monthly and rolling 12-month total operating hours for fuel gas heaters.

Compliance Assurance Monitoring (CAM) applicability: CAM is not applicable because the combustion turbines are not required to be equipped with control devices.

Process Description

The two simple cycle combustion turbines will have a nominal power generating capacity of 222 megawatts (MW) each and will be fired with natural gas. Each turbine is a General Electric (GE) Frame 6 turbine with a maximum heat input of 2,291.3 MMBtu/hr, high heating value (HHV) basis. The turbines will be equipped with dry low NO_x burners (DLN) for NO_x control. The air and fuel mixture is combusted, and the exhaust gases are routed through a turbine which turns a power generator. The exhaust gases are eventually released to the atmosphere through a dedicated stack for each turbine. The two fuel gas heaters will be natural gas-fired, which aid in pre-heating the fuel gas as needed. The emergency generator will be diesel fired and rated at 1500 kW. Maximum runtime hours for non-emergency operations will be 100 hrs/year. Diesel used for the emergency generator will be stored in a horizontal tank that is internally associated with the engine enclosure (i.e., belly tank). Emissions are also generated from the lubrication oil feed system for the combustion turbines. The emissions from the planned MSS activities at the plant are based on the practical worst-case hourly scenario to generate the maximum emission for each individual MSS activity. Each turbine is expected to have no more than 300 startup and shutdown events per year lasting a maximum of 18 minutes for each event. Inherently low emitting (ILE) maintenance activities (EPNs ILE-MSS1 and ILE-MSS2) include air intake filter maintenance, CEMS analyzer calibration, analytical equipment, small equipment maintenance (low vapor pressure), and gaseous fuel venting. Non-ILE planned maintenance activities include turbine startups and shutdown as well as natural gas purging and venting.

Project Scope

AEP SWEPCO submitted an expedited initial NSR permit application proposing to authorize a natural gas-fired simple cycle combustion turbine facility located in Hallsville, Harrison County. AEP owned and SWEPCO operated a power generation plant previously authorized for the now retired coal-fired unit under TCEQ NSR Permit nos. 6269 and 6270, Title V Permit O31, and various registered and unregistered Permit by Rule (PBR) authorizations. The unit retired in March 2023 and all associated permits either have been voided or will be voided. The previous coal-fired unit was an existing major source with respect to the PSD program; however, total site emission rates for each pollutant are now less than the PSD major source threshold; therefore, the site is an existing minor PSD site.

The facility will consist of two natural gas-fired simple cycle combustion turbines and associated auxiliary equipment, including two fuel gas heaters and one emergency engine. The installation will occur on the site of the previously permitted and now retired coal-fired unit and will be called the Hallsville Natural Gas Plant. The turbines will be limited to approximately 33% capacity factor on an annual basis (which includes MSS operations), serving as peaker/intermediate load units.

Best Available Control Technology

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Source Name	EPN	Best Available Control Technology Description
Simple Cycle Combustion Turbines	SCGT-1, SCGT-2 ILE-MSS1, ILE-MSS2	VOC: 1.2 ppmvd at 15% O₂ achieved through good combustion practices NOx: 9.0 ppmvd at 15% O₂ on a 3-hour rolling average, achieved utilizing dry low NOx burners and good combustion practices CO: 9.0 ppmvd at 15% O₂ on a 3-hour rolling average, achieved through good combustion practices PM/PM₁₀/PM_{2.5}: Good combustion practices and use of pipeline quality natural gas; maximum opacity of 5%. SO₂: Good combustion practices and use of pipeline quality natural gas (low sulfur fuel). Sulfur content of fuel will not exceed 0.5 gr/100 scf on an hourly and annual basis. H₂SO₄: Good combustion practices and use of pipeline quality natural gas (low sulfur fuel). Sulfur content of fuel will not exceed 0.5 gr/100 scf on an hourly and annual basis. Sulfuric acid mist emissions estimated based on the assumption that 15% of total sulfur will be converted into SO₂ and that all of the SO₃ will react with water vapor to form a sulfuric acid mist (H₂SO₄). MSS: The duration of MSS activities will be minimized as much as feasible. Elevated CO, NO_x, and VOC concentrations are expected during startup and shutdown. Startups and shutdowns are limited to the hourly allowable emission rates on the MAERT. Specifically, the Applicant represented that the maximum hourly startup/shutdown rate is based on 18 minutes of startup, 29 minutes of normal operations, and 13 minutes of shutdown; therefore, the full 60 minutes is accounted for. Inherently low emitting maintenance activities (EPNs ILE-MSS1 and ILE-MSS2) include air intake filter maintenance, CEMS analyzer calibration, analytical equipment, small equipment maintenance (low vapor pressure), and gaseous fuel venting.
Fuel Gas Heaters	FGHTR-1, FGHTR-2	Heaters are <40 MMBtu/hr and each limited to 2,891 hours per year of operation for each heater VOC: Firing pipeline quality natural gas and good combustion practices NOx: Implementation of good burner configuration and use of natural gas; NOx emission rate <0.01 lb/MMBtu CO: 50 ppmv and good combustion practices PM/PM₁₀/PM_{2.5}: Firing pipeline quality natural gas and good combustion practices; maximum opacity 5%. PM = PM₁₀ = PM_{2.5}. SO₂: Sulfur content of natural gas fuel will not exceed 0.5 gr/100 scf on an hourly and annual basis.
Emergency Generator	EMGEN	Meets the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel with no more than 15 ppm sulfur by weight. Limited to 100 hours per year of non-emergency operation and equipped with a non-resettable runtime meter. PM = PM ₁₀ = PM _{2.5} .
Diesel Storage Tank	DSLTK	Diesel used for the emergency generator will be stored in a black horizontal tank that is internally associated with the engine enclosure (i.e., belly tank). Tank capacity is 1,715 gallons storing ultra-low sulfur diesel (ULSD) for the emergency generator. Throughput records will be maintained.
Lube Oil Vents	LOV-1, LOV-2	Will be equipped with high efficiency mist eliminators to control emissions of VOC and particulate matter. Lube oil mist eliminator vents are estimated to emit equal to or less than 0.30 gallons per day of lube oil per vent, based on oil consumption for similar permitted units. PM = PM ₁₀ = PM _{2.5} .
Fugitives	FUG-GAS	Natural gas fugitives. Total uncontrolled VOC emissions are <10 tpy; therefore, no additional Leak Detection and Repair (LDAR) program is required.

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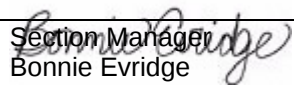
Permits Incorporation:

As described above, AEP owned and SWEPCO operated a power generation plant previously authorized for the now retired coal-fired unit under TCEQ NSR Permit nos. 6269 and 6270, Title V Permit O31, and various registered and unregistered Permit by Rule (PBR) authorizations. The unit retired in March 2023, and the Applicant represented that all associated permits either have been voided or will be voided. The following authorizations were voided on 2/7/2025 per company request: PBRs 158388, 41433, 43466, 78665, 80150, 81378. Additionally, NSR permit no. 6270 was voided by project 385338 on 02/07/2025.

Impacts Evaluation

Was modeling conducted?	Yes	Type of Modeling:	AERMOD (Version 23132)
Is the site within 3,000 feet of any school?			No

Based on the modeling review, the air quality analysis (AQA) is acceptable for all review types and pollutants. Note three model audits were conducted due to representation updates made during the course of the technical review. The health effects review is complete and no adverse health effects are expected to occur among the public health, welfare, or the environment as a result of exposure to the emissions from the facilities authorized by this permit. Please see the modeling audit dated May 8, 2025 (WCC Content ID: 7722568) for full details.

	9/22/25		9/23/2025
Project Reviewer Ariel Ramirez	Date	Section Manager Bonnie Evridge	Date