Alabama Department of Environmental Management

AIR PERMIT

PERMITTEE: POWERSOUTH ENERGY COOPERATIVE

FACILITY NAME: CHARLES R. LOWMAN POWER PLANT

LOCATION: LEROY, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE, OR DEVICE
108-0001-X005	Combined Cycle Combustion Turbine and Heat Recovery Steam Generator with Duct Burner, Oxidation Catalyst, and Selective Catalytic Reduction (SCR)

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22-28-1 to 22-28-23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22-22A-1 to 22-22A-17, as amended, and rules and regulations adopted there under, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: Draft

Alabama Department of Environmental Management

POWERSOUTH - LOWMAN
LEROY, ALABAMA
(PERMIT NO. 108-0001-X005)
PROVISOS

General Permit Provisos

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. Unless otherwise specified in the unit-specific provisos of this permit, in case of shutdown of air pollution control equipment (which operates pursuant to this permit) for scheduled maintenance for a period greater than **1 hour,** the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown, **unless accompanied by the immediate shutdown of the emission source.**
6. Unless otherwise specified in the unit-specific provisos of this permit, in the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants which are above an applicable standard, the person responsible for such equipment shall notify the Air Division within an additional 24 hours or the next working day and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. All deviations from the requirements within this permit shall be reported to the Department within 48 hours of the deviation or by the next work day while providing a statement with regard to the date, time, duration, cause, and corrective actions taken to bring the source(s) back into compliance.
8. Unless otherwise specified, this process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
9. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
10. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.

11. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.

12. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.

13. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

    To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

    a. The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
    b. A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
    c. A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
    d. A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

    A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

    All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

14. Records will be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the process equipment and any malfunction of the air pollution control equipment. These records will be kept in a permanent form suitable for inspection and will be retained for at least two years following the date of each occurrence.

15. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

    Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

    a. by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;

    b. by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;

c. by paving;

d. by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

16. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.

17. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.

18. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

19. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.

20. An annual compliance certification shall be submitted by March 1st, covering the reporting period of January 1 through December 31 of the previous calendar year, unless more frequent periods are specified according to the specific rule governing the source or required by the Department.

(a) The compliance certification shall include the following:

a. The identification of each term or condition of this permit that is the basis of the certification;

b. The compliance status;

c. The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(c) (Monitoring and Recordkeeping Requirements);

d. Whether compliance has been continuous or intermittent; and

e. Such other facts as the Department may require in order to determine the compliance status of the source.

(b) The compliance certification shall be submitted to:

Alabama Department of Environmental Management
Air Division
P.O. Box 301463
Montgomery, AL 36130-1463

Combined Cycle Combustion Turbine and Heat Recovery Steam Generator with Duct Burner, Oxidation Catalyst, and SCR
Provisos

	Regulations
Applicability	
1. This unit is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01, "Control of Particulate Emissions – Visible Emissions".	Rule 335-3-4-.01
2. This unit is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03, "Control of Particulate Emissions – Fuel Burning Equipment".	Rule 335-3-4-.03
3. This unit is subject to the applicable requirements of ADEM Admin. Code r. 335-3-5-.01, "Control of Sulfur Compound Emissions – Fuel Combustion".	Rule 335-3-5-.01
4. This unit is subject to the applicable provisions of the Cross-State Air Pollution Rule found in ADEM Admin. Code r. 335-3-5-.06 through 335-3-5-.36 and ADEM Admin. Code r. 335-3-8-.07 through 335-3-8-.70.	Rules 335-3-5-.06 through 335-3-5-.36 and Rules 335-3-8-.07 through 335-3-8-.70
5. This unit is subject to the applicable requirements of Subpart A, the General Provisions of 40 CFR Part 60.	Rule 335-3-10-.02(1) 40 CFR 60.1(a) 40 CFR 60.4420
6. This unit is subject to the applicable requirements of 40 CFR Part 60 Subpart KKKK, "Standards of Performance for Stationary Combustion Turbines".	Rule 335-3-10-.02(89) 40 CFR 60.4305
7. This unit is subject to the applicable requirements of 40 CFR 60 Subpart TTTT, "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units".	Rule 335-3-10-.02(96) 40 CFR 60.5508
8. This unit has enforceable limits in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, "Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]".	Rule 335-3-14-.04 (Anti-PSD)
9. This unit is part of a source subject to the applicable requirements of ADEM Admin. Code r. 335-3-16, "Major Source Operating Permits."	Rule 335-3-16
10. Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions are incorporated as enforceable conditions of this permit.	Rule 335-3-16-.05(a)2
11. This unit is subject to the Acid Rain Rules contained in Rule 335-3-18 and 40 CFR Part 72, 73 and 75.	Rule 335-3-18 and 40 CFR Parts 72, 73 and 75

	Regulations
Emission Standards	
1. Visible emissions from this unit shall not exceed 20% opacity except during one six (6) minute period in any sixty (60) minute period which opacity shall not exceed 40%.	Rule 335-3-4-.01(1)
2. Particulate matter (PM) emissions from this unit shall not exceed the allowable per Table 4-1 of ADEM Admin. Code r. 335-3-4-.03.	Rule 335-3-4-.03
3. The sulfur dioxide (SO_2) emissions from this unit shall not exceed 4.0 lb/MMBtu.	Rule 335-3-5-.01(1)(b)
4. The NO_X emission rate from this unit shall not exceed 15 ppm (at 15% O_2) or 0.43 lb/MWh of useful output. These limits apply on a 30-day rolling average basis.	Rule 335-3-10-.02(89) 40 CFR 60.4320(a) 40 CFR Part 60 Subpart KKKK, Table 1 40 CFR 60.4350(h)
5. The Permittee must not burn any fuel in the turbine which contains total potential sulfur emissions in excess of 26ng SO_2/J (0.060 lb/MMBtu) heat input.	Rule 335-3-10-.02(89) 40 CFR 60.4330(a)(2)
6. Carbon monoxide (CO) emissions from this unit shall not exceed 6.5 ppmvd at 15% O_2 and 65.5 lb/hr.	Rule 335-3-14-.04 (Anti-PSD)
7. The CO_2 emission rate from the combined-cycle unit shall not exceed 1,000 lb CO_2/MWh of gross energy output (450 kg CO_2/MWh). Compliance is determined on a 12-month rolling average basis.	Rule 335-3-10-.02(96) 40 CFR 60.5520(a) 40 CFR 60 Subpart TTTT, Table 2
8. The turbine and duct burner shall fire only natural gas.	Rule 335-3-14-.04 (Anti-PSD)
9. The duct burner heat input shall not exceed 4,792,000 million British thermal units (MMBtu) in a 12-month period.	Rule 335-3-14-.04 (Anti-PSD)
10. Emissions exceeding any allowances that the source lawfully holds under Title IV of the Act or the regulations promulgated thereunder are prohibited.	Rule 335-3-16-.05(d)
Compliance and Performance Test Methods and Procedures	
1. Compliance with the opacity standard in Emission Standards Proviso No. 1 shall be determined by EPA Reference Method 9 as found in Appendix A-4 of 40 CFR Part 60.	Rule 335-3-1-.05(1)
2. Compliance with the PM emission limit in Emission Standards Proviso No. 2 shall be determined by EPA Reference Method 5 or 17, as found in Appendix A-3 and Appendix A-6, respectively, of 40 CFR Part 60.	Rule 335-3-1-.05(1)

		Regulations
3.	Compliance with the NO_X emission limit in Emission Standards Proviso No. 4 shall be determined using a NO_X diluent CEMS that is installed, operated, maintained, and certified according to 40 CFR Part 75, Appendix A.	Rule 335-3-10-.02(89) 40 CFR 60.4340(b)(1)
4.	For purposes of demonstrating compliance with the sulfur content of the fuel pursuant in Emission Standards Proviso Nos. 3 and 5, the owner or operator may use one of the following options:	Rule 335-3-10-.02(89) 40 CFR 60.4360
	(a) Analyze the sulfur content of the fuel using ASTM D1072, or alternatively D3246, D4048, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377;	40 CFR 60.4415(a)
	(b) Maintain a current, valid fuel purchase contract, tariff sheet, or transportation contract for the natural gas specifying the maximum total sulfur content is less than 20 grains sulfur per 100 scf and has potential sulfur emissions of less than 26 ng SO_2/J (0.060 lb SO2/MMBtu) heat input;	40 CFR 60.4365(a)
	(c) Conduct daily sampling of the natural gas sulfur content for the first 30-unit operating days following the change and annually thereafter to show the actual fuel sulfur content is less than 10 grains sulfur per 100 scf; or	40 CFR 60.4370(c)(1)
	(d) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.	40 CFR 60.4365(b)
5.	Compliance with the CO emissions limit in Emission Standards Proviso No. 6 shall be determined by EPA Reference Method 10 as found in Appendix A-4 of 40 CFR 60.	Rule 335-3-1-.05(1)
6.	Compliance with the CO_2 emissions limit in Emission Standards Proviso No. 7 shall be determined using the methods provided in 40 CFR Part 60, Subpart TTTT.	Rule 335-3-10-.02(96) 40 CFR 60.5540
7.	If testing is required, Method 25, 25A, or 25B as found in Appendix A-7 of 40 CFR Part 60 shall be used to determine the volatile organic compounds (VOC) emissions from the combined turbine and duct burner stack.	Rule 335-3-1-.05(1)

	Regulations
8. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.	Rule 335-3-1-.05(1)
9. The Permittee must operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.	Rule 335-3-10-.02(89) 40 CFR 60.4333(a)
Emission Monitoring	
1. A continuous emissions monitoring system (CEMS) to measure NO_X emissions shall be installed and operated at a location approved by the Director. The CEMS shall meet the specifications and procedures of 40 CFR Part 75 and will be certified and maintained in accordance with 40 CFR Part 75. Additionally, the CEMS shall meet the requirements described in 40 CFR 60.4335(b), 40 CFR 60.4345, and 40 CFR 60.4350.	Rule 335-3-10-.02(89) 40 CFR 60.4340(b)(1)
2. The Permittee is exempt from monitoring the total sulfur content of the fuel provided that the fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specify that the total sulfur content for natural gas use is 20 grains of sulfur or less per 100 standard cubic feet and the fuel has potential sulfur emissions of less than less than 0.060 lb SO_2/MMBtu heat input.	Rule 335-3-10-.02(89) 40 CFR 60.4365(a)
3. The Permittee shall conduct a performance test according to the requirements in General Permit Proviso Nos. 15 & 18 and the *Compliance and Performance Test Methods and Procedures* section of the Permit to demonstrate compliance with Emission Standard No. 6 by December 31, 2025.	
(a) Performance tests shall be conducted under such conditions as the Department specifies to the Permittee based on representative performance of the combustion turbine for the period being tested.	
(b) Each performance test must consist of three (3) separate runs; pollutant sampling for each run must be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of one (1) hour.	

	Regulations
(c) Subsequent performance tests shall be conducted by December 31 every five (5) years to demonstrate compliance with Emission Standards Proviso No. 6.	
Recordkeeping and Reporting Requirements	
1. All records shall be maintained in a form suitable for inspection for a period of at least five years following the date of record generation. All records shall be made available upon request.	Rule 335-3-16-.05(c)
2. The Permittee shall maintain records of the duct burner heat input (MMBtu) on a rolling 12-month basis.	Rule 335-3-16-.05(c)
3. The Permittee shall maintain records of the natural gas burned in the combustion turbine.	Rule 335-3-10-.02(96) 40 CFR 60.5520(d)(1)
4. The Permittee shall submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c), by the 30th day following the end of each six-month period. Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of this report, periods of excess emissions and monitor downtime that shall be reported are defined as follows:	Rule 335-3-10-.02(89) 40 CFR 60.4375(a) 40 CFR 60.4380(b) 40 CFR 60.4395
(a) A period of excess emissions is any unit operating period in which the 30-day rolling average NO_X emission rate exceeds the applicable emission limit in 40 CFR 60.4320. A "30-day rolling average NO_X emission rate" is the arithmetic average of all hourly NO_X emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO_X emissions rates for the preceding 30 unit operating days if a valid NO_X emission rate is obtained for at least 75 percent of all operating hours.	
(b) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO_X concentration, CO_2 or O_2 concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you use this information for compliance purposes.	