STATEMENT OF BASIS
PowerSouth Energy Cooperative, Inc.
McIntosh Power Plant
McIntosh, Washington County, AL
108-0012

The proposed third Title V Major Source Operating Permit (MSOP) renewal is issued under the provisions of ADEM Admin. Code. R. 335-3-16. The above-referenced applicant has requested authorization to perform work or operate the facility shown on the application and drawings, plans and other documents, which were submitted on December 1, 2022 and are attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

PowerSouth Energy Cooperative, Inc. was issued the existing MSOP on June 13, 2018, with an expiration date of June 12, 2023, for the McIntosh Power Plant located at 7115 Highway 43, McIntosh, Washington County, Alabama. Per ADEM Rule 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more that eighteen (18) months, before the date of expiration of the permit. The application for the third renewal was received on December 1, 2022. Additional information was provided on January 12, 2023, January 23, 2023, May 8, 2023, July 17, 2023, and August 28, 2023. The proposed MSOP will expire five (5) years from the date of issuance of the renewal.

Title V History

Title V Permitting Action	Issuance Date	Expiration Date
Initial	06/25/2008	06/24/2013
Signification Modification to include Units 4 and 5	04/24/2012	06/24/2013
1st Renewal	03/21/2013	03/20/2018
2nd Renewal	06/13/2018	06/12/2023

The facility is located in Washington County, which is currently classified as attainment/unclassifiable with the National Ambient Air Quality Standards (NAAQS) for all pollutants.

There are no current or ongoing enforcement actions against PowerSouth Energy Cooperative, Inc. – McIntosh Power Plant (PowerSouth) necessitating additional requirements to achieve compliance with the proposed permit conditions. The enforcement and compliance history for the facility can be found at https://echo.epa.gov/ (Search using Facility ID AL110043058160).

PowerSouth has requested a permit shield in their Title V application. The regulations for which PowerSouth requests the permit shield can be found in the General section of their Title V application.

Facility Background
McIntosh Power Plant is owned and operated by PowerSouth Energy Cooperative and is located in McIntosh, Alabama. The facility is classified as a major source of criteria pollutants and an

area source for hazardous air pollutants (HAP). This facility was originally constructed by Alabama Electric Cooperative in 1985. In April 2008, Alabama Electric Cooperative changed its name to PowerSouth Energy Cooperative.

The significant sources of air pollution at this facility are:
One (1) natural-gas fired Dresser-Rand Model 1, 110 MW simple cycle combustion turbine, McIntosh Unit 1 (Model Year 1990; installed 1991);
Two (2) natural-gas/distillate fuel oil fired Siemens Model C84.2, 113 MW simple cycle combustion turbines, McIntosh Unit 2 and 3 (Model Year 1997; installed 1998);
Two (2) natural-gas fired Siemens Model SGT6-5000F, 170.5 MW simple cycle combustion turbines, McIntosh Unit 4 and 5 (Model Year 2010; installed 2010);
One (1) 1,592 bhp Caterpillar Model 3512STD Emergency Engine (Model Year 1989; installed 1989);
One (1) 141 bhp Caterpillar Model 3208 Emergency Engine (Model Year 1989; installed 1989)

Facility-Wide Emissions

Pollutant	**Potentials (TPY)**	**2023Actuals (TPY)**
Particulate Matter, total (PM)	107.7	27.66
Sulfur Dioxide (SO_2)	38.7	2.60
Carbon Monoxide (CO)	224.3	62.90
Nitrogen Oxides (NOx)	654.7	209.20
Volatile Organic Compounds (VOC)	44.4	8.80
Organic HAPS	9.61	0.26

Notable Changes
This renewal will address the following changes:

1. Incorporate NOx Anti-PSD emission limit of 246 tons per rolling 12-month period for Units 1, 2, and 3 based on Air Permit 108-0012-X006 (October 2, 2008). This limit will replace the current Anti-PSD NOx limits in the permit for these units.
2. For Unit 1 – 110 MW Compressed Air Energy Source (CAES) Turbine, due to no particulate matter emission standard, the method in the compliance and performance testing section of the permit for particulate matter has been removed.
3. For Unit 1 – 110 MW Compressed Air Energy Source (CAES) Turbine, as the turbine is exclusively natural gas, recordkeeping requirement for fuel oil usage has been removed.
4. For Units 2 & 3 – 113 MW Simple Cycle Combustion Turbines, the NOx continuous emission monitoring system (CEMS) is used as a determiner for the NOx limit. The CEMS complies with the Acid Rain Program of 40 CFR Part 75. Per 40 CFR 64.2(b)(1)(III), CAM shall not apply; therefore, the Compliance Assurance Monitoring (CAM) Plan has been removed.
5. All major facilities are now required to submit a Facility-Wide Fugitive Dust Plan, if necessary. There are no raw materials, storage piles, products, etc. capable of generating fugitive dust at this facility. All plant roads are paved or graveled, thereby significantly limiting the potential for fugitive dust. In other words, emissions are expected to be insignificant, as is the likelihood that the facility will violate the general SIP requirements

related to fugitive dust. Therefore, additional specific requirements for fugitive dust, including additional monitoring, recordkeeping, or reporting requirements, are not necessary for this facility in order to assure compliance with the SIP.

6. Any changes to federal or state regulations will be discussed in detail in the applicable sections of the permit during this renewal.

Turbine Requirements

The following regulations may be applicable to the turbines:

40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines
Turbines are subject to the applicable requirements of this subpart if they have a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour and if they commenced construction, modification, or reconstruction after October 3, 1997.

40 CFR Part 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines
Turbines are subject to the applicable requirements of this subpart if they have a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour and if they commenced construction, modification, or reconstruction after February 18, 2005.

40 CFR Part 63, Subpart YYYY, National Emissions Standards for Hazardous Air Pollutants (HAPS) for Stationary Combustion Turbines
Turbines are subject to the requirements of this subpart if the unit is located at a major source of HAP emission that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year.

Unit	Construction Year	Modification Year	Subject to:
1	1989	-	GG
2	1996	2000	GG
3	1996	2000	GG
4	2009	-	KKKK
5	2009	-	KKKK

110 MW Dresser-Rand Compressed Air Energy Storage Turbine (Unit 1)

Unit 1 combusts natural gas, but formerly combusted distillate fuel oil as a backup. The combustion turbine has the capacity to generate electric power of approximately 110 MW. Unit 1 is located over a salt formation to use off-peak energy to compress and store air in a cavern within the salt formation to be used during peak energy demand.

Air Permit X003 was issued on July 28, 1989 for Unit 1. In order to avoid a Prevention of Significant Deterioration (PSD) review, the facility was limited to 200,000 MW hours for each rolling 12-month period and 20,000 MW while burning distillate fuel oil, and limit NOx emissions to 126 ppm while burning natural gas and 181 ppm while burning distillate fuel oil as measured by CEMS. Synthetic Minor Operating Permit for X003 was issued on April 4, 1995 for Unit 1 with Anti-PSD limit of combusting no more than 680,000 gallons of distillate fuel oil and 830 million ft^3 of natural gas. On October 2, 2008, Air Permit X006 established restrictions that limit NOx emission to 246 tpy or less during each rolling 12-month period as measured by CEMS for

Units 1, 2, and 3, and that Unit 1 may combust only natural gas. The unit is subject to the New Source Performance Standards (NSPS) contained in 40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines. The unit is also subject to the Cross-State Air Pollution Rule (CSAPR).

Emission Standards

Opacity

- This unit shall not discharge more than 6-minute average opacity greater than 20% in any 60-minute period. At no time shall this unit discharge a 6-minute average opacity of particulate emissions greater than 40%.
  ADEM Admin. Code R. 335-3-4-.01(1)(a) and (b)

Sulfur Dioxide (SO_2)

- The SO_2 emissions from this combustion turbine unit shall not exceed 0.015 percent by volume at 15% O_2 and on a dry basis or sulfur content of fuels $\leq$ 0.8% by weight.
  40 CFR Part 60, Subpart GG [40 CFR 60.333(a) and (b)]
- This unit shall only burn natural gas.
  ADEM Admin. Code R. 335-3-14-.04(9)

Nitrogen Oxides (NOx)

- The NOx emissions from this combustion turbine unit shall not exceed 208 ppmv at 15% O_2.
  40 CFR Part 60, Subpart GG [40 CFR 60.332(a)]
  The current NOx emission limit was requested in the September 15, 2017 Title V Permit Renewal application based on the equation in 40 CFR 60.332(a)(1). With a heat capacity of 538 MMBtu/hour, electric generation of 110 MW, manufacturer's rated heat rate of 75 ppmv, and no allowances, the calculated standard is 208 ppmv at 15% O_2.
- NOx emission from Units 1, 2, and 3 shall not exceed 246 tons per rolling 12-month period.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Expected Emissions

Opacity

No visible emissions are expected while firing natural gas.

Sulfur Dioxide (SO_2)

Natural gas is the exclusive fuel for this unit, resulting in an emission rate of approximately 0.003 lb/MMBtu.

Nitrogen Oxide (NOx)

The most recent NOx compliance test indicated maximum NOx emissions of approximately 67.2 ppmv at 15% O_2 while firing natural gas, less than the Subpart GG allowable limit of 208 ppmv.

Periodic Monitoring

Opacity

Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of opacity is not considered necessary.

Particulate Matter (PM)
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of particulate matter emissions is not considered necessary.

Sulfur Dioxide (SO_2)
As this unit only combusts natural gas, periodic monitoring of sulfur dioxide emissions is not considered necessary. According to 40 CFR 60.334(h)(3), the facility has demonstrated that the fuel meets the definition of natural gas in 40 CFR 60.331 (u), so therefore is not required to monitor the total sulfur content of the fuel combusted in the turbine.

Nitrogen Oxide (NOx)
This unit is required by the current Title V Permit to operate continuously on the exhaust stack a NOx continuous emission monitoring system (CEMS). The CEMS is used to demonstrate compliance with the 246 tpy combined limit and the Acid Rain Program.
ADEM Admin. Code R. 335-3-14-.04(9) and 40 CFR Part 75

Compliance Assurance Monitoring (CAM)
No control equipment is utilized to meet any applicable emissions limitation; therefore, CAM does not apply to any pollutant emitted by this unit.

Recordkeeping and Reporting Requirements

- Records documenting the sulfur content of the fuel burned in this unit including the vendor certifications shall be kept at the facility in a form suitable for inspection for a period of at least five years following said recording.
  ADEM Admin. Code R. 335-3-16-.05(c)
- An excess emissions report for the turbine stack as defined by 40 CFR Part 60, Subpart A, 60.7(c) and (d), shall be submitted to the Department by the 30th day following the end of each six-month period.
  40 CFR 60.334(j)
- Records which document combined monthly and rolling 12-month NOx emissions totals from Units 1, 2, & 3 shall be maintained in a form suitable for inspection, shall be maintained for a period of at least five years following such recording, and shall be available upon request.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD
- Records which document rolling 12-month NOx emissions totals from Unit 1 shall be submitted to the Department within 30 days of the end of each calendar quarter, maintained in a form suitable for inspection, shall be maintained for a period of at least five years following said recording, and shall be made available upon request.
  ADEM Admin. Code R. 335-3-14-.04(9) /Anti-PSD
- The facility shall comply with the recordkeeping and reporting requirements of CSAPR.
  ADEM Admin. Code R. 335-3-5-.31, 335-3-5-.35, 335-3-8-.33, 335-3-8-.37, 335-3-8-.65, and 335-3-8-.69

Two (2) 113 MW Siemens Simple Cycle Combustion Turbines (Units 2 & 3)

Units 2 and 3 are simple cycle combustion turbines that combust natural gas with distillate fuel oil as a backup, and as used for peak generating only. The combustion turbines have the capacity to generate electric power of approximately 113 MW. The units are equipped with water injection for NOx emissions control.

Air Permit Z005 was issued on February 26, 1996 for Units 2 and 3. In the application, the facility requested and were approved for emission limits along with fuel burn limits in order to avoid a Prevention of Significant Deterioration (PSD) review, with 428,000,000 SCF for natural gas and 35,000,000 gallons for distillate fuel oil. On July 19, 2000, the facility was approved to install CEMS for NOx and CO and increase natural gas amounts to 5,772,200 MMBtu while decreasing fuel oil to 434,500 MMBtu. Air Permit X006 issued on October 2, 2008 for Units 1, 2, and 3 established restrictions that limit NOx emission to 246 tpy or less during each rolling 12-month period as measured by CEMS.

Firing Mode	Fuel
Diffusion	Natural Gas
Diffusion	Distillate Fuel Oil
Pre-mix	Natural Gas

Emission Standards

Opacity

- This unit shall not discharge more than 6-minute average opacity greater than 20% in any 60-minute period. At no time shall this unit discharge a 6-minute average opacity of particulate emissions greater than 40%.
  ADEM Admin. Code R. 335-3-4-.01(1)(a) and (b)
- Visible emissions from each combustion turbine stack shall not exceed 10% opacity.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Particulate Matter (PM)

- The PM emissions from each combustion turbine unit shall not exceed 0.01 lb/MMBtu and 15.04 lb/hr while burning natural gas or distillate fuel oil.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Sulfur Dioxide (SO_2)

- The SO_2 emissions from this combustion turbine unit shall not exceed 0.015 percent by volume at 15% O_2 and on a dry basis or sulfur content of fuels $\leq$ 0.8% by weight.
  40 CFR Part 60, Subpart GG [40 CFR 60.333(a) and (b)]
- The sulfur content of the distillate fuel oil shall not exceed 0.05% by weight.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Nitrogen Oxides (NOx)

- The NOx emissions from each combustion turbine unit shall not exceed 82 ppmv corrected to 15% O_2 on a dry basis with an upward adjustment for heat rate and fuel bound nitrogen.
  40 CFR Part 60, Subpart GG [40 CFR 60.332(a)]
- NOx emission from Units 1, 2, and 3 shall not exceed 246 tons per rolling 12-month period.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Volatile Organic Compounds (VOC)

- The VOC emissions from each combustion turbine unit shall not exceed 0.01 lb/MMBtu and 15.04 lb/hr while burning natural gas or distillate fuel oil.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Carbon Monoxide (CO)

- The CO emissions from each combustion turbine unit shall not exceed 0.04 lb/MMBtu and 60.16 lb/hr when burning natural gas and 0.06 lb/MMBtu and 90.24 lb/hr when burning distillate fuel oil.
  ADEM Admin. Code 335-3-14-.04(9)/Anti-PSD

Operational

- These units shall operate at loads greater than that set by the most recent emissions test that demonstrated compliance with applicable emissions limitations.
  ADEM Admin. Code 335-3-14-.04

Expected Emissions

Opacity

No visible emissions are expected while firing natural gas or distillate fuel oil.

Particulate Matter (PM)

The following are the emission rates indicated by the initial performance testing:

Unit	Fuel Type	PM (lb/MMBtu)	PM (lb/hr)
2	Distillate Fuel Oil	0.0066	8.5
2	Natural Gas	0.0023	3.2
3	Distillate Fuel Oil	0.0069	9.7
3	Natural Gas	0.0023	3.7

Sulfur Dioxide (SO_2)

Natural gas is the primary fuel for these units, resulting in an emission rate of approximately 0.000538 lb/MMBtu. The sulfur content of the distillate fuel oil burned in these units is restricted to no greater than 0.05% by weight.

Nitrogen Oxides (NOx)

During the initial compliance testing, the NOx emission rates from the units were below the permitted allowable emissions limits. Compliance testing was conducted at several loads and the worst-case NOx emissions were as noted below:

Unit	Fuel Type	NOx (lb/hr)	NOx (ppm)
2	Distillate Fuel Oil	195.6	39.6
2	Natural Gas – Diffusion Mode	158	39.6
2	Natural Gas – Premix Mode	62.1	16.2

3	Distillate Fuel Oil	164.3	10.3
3	Natural Gas – Diffusion Mode	188.4	36.9
3	Natural Gas – Premix Mode	76.2	22.1

Volatile Organic Compounds (VOC)
During initial compliance testing, the VOC emission rates from the units were below the permitted allowable emission limits. Compliance testing was conducted at several loads and the worst-case VOC emissions were as noted below:

Unit	Fuel Type	VOC (lb/hr)
2	Distillate Fuel Oil	2.0
2	Natural Gas – Diffusion Mode	7.9
2	Natural Gas – Premix Mode	6.7
3	Distillate Fuel Oil	2.0
3	Natural Gas – Diffusion Mode	6.8
3	Natural Gas – Premix Mode	6.5

Carbon Monoxide (CO)
During the initial compliance testing, the CO emission rates were below the permitted allowable emission limits. Compliance testing was conducted at several loads and the worst-case CO emissions were noted below:

Unit	Fuel Type	CO (lb/hr)
2	Distillate Fuel Oil	42.8
2	Natural Gas – Diffusion Mode	53.9
2	Natural Gas – Premix Mode	20.0
3	Distillate Fuel Oil	15.9
3	Natural Gas – Diffusion Mode	34.3
3	Natural Gas – Premix Mode	26.8

At load of 57 MW, CO (lb/hr) and NOx (ppm) emissions were greater than the limit at lower load; therefore, the load was limited to no less than 57 MW.

Periodic Monitoring
Opacity
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of particulate matter emissions is not considered necessary.

Particulate Matter (PM)
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of particulate matter emissions is not considered necessary.

Sulfur Dioxide (SO_2)
These units are not allocated annual SO_2 allowances through the Acid Rain Program. However, they must hold enough allowances to cover their annual SO_2 emissions. 40 CFR Part 75 provisions are utilized to track annual SO_2 emissions. Distillate fuel oil sampling is utilized to monitor the sulfur content of the distillate fuel oil burned in the units.

Nitrogen Oxides (NOx)
The combustion turbine units are required to operate continuously on the exhaust stack a NOx continuous emission monitoring system (CEMS). The CEMS is used to demonstrate compliance with Anti-PSD limit and the Acid Rain Program.
ADEM Admin. Code R. 335-3-14-.04(9) and 40 CFR Part 75

Volatile Organic Compounds (VOC)
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of volatile organic compounds emissions is not considered necessary.

Carbon Monoxide (CO)
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of carbon monoxide emissions is not considered necessary.

Compliance Assurance Monitoring (CAM)
These units are each required by 40 CFR Part 75 to maintain and operate a NOx continuous emissions monitoring system (CEMS). The NOx CEMS maintained according to the provisions of 40 CFR Part 75; therefore, per 40 CFR 64.2(b)(1)(vi), CAM does not apply to these units.
Recordkeeping and Reporting Requirements

- Records documenting the sulfur content of the fuel burned in these units including vendor certification shall be kept at the facility in a form suitable for inspection for a period of at least five years following said recording.
  ADEM Admin. Code R. 335-3-16-.05(c)
- An excess emissions report for the turbine stack as defined by 40 CFR Part 60, Subpart A, 60.7(c) and (d), shall be submitted to the Department by the 30th day following the end of each six-month period.
  40 CFR 60.334(j)
- Records which document combined monthly and rolling 12-month NOx emissions totals from Units 1, 2, & 3 shall be maintained in a form suitable for inspection, shall be maintained for a period of at least five years following such recording, and shall be available upon request.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD
- Records which document rolling 12-month NOx emissions totals from Units 2 & 3 shall be submitted to the Department within 30 days of the end of each calendar quarter, maintained in a form suitable for inspection, shall be maintained for a period of at least five years following said recording, and shall be made available upon request.
  ADEM Admin. Code R. 335-3-14-.04(9) /Anti-PSD
- The facility shall comply with the recordkeeping and reporting requirements of CSAPR.

ADEM Admin. Code R. 335-3-5-.31, 335-3-5-.35, 335-3-8-.33, 335-3-8-.37, 335-3-8-.65, and 335-3-8-.69

Two (2) 170.5 MW Siemens Simple Cycle Combustion Turbines (Units 4 & 5)
Units 4 and 5 are simple cycle combustion turbines that combust natural gas. The combustion turbines have the capacity to generate electric power of approximately 170.5 MW.

Air Permit X006 issued on March 11, 2009 for Units 4 and 5 established restrictions that limit NOx emission to 246 tpy or less during each rolling 12-month period as measured by CEMS.

Emission Standards
Opacity
- This unit shall not discharge more than 6-minute average opacity greater than 20% in any 60-minute period. At no time shall this unit discharge a 6-minute average opacity of particulate emissions greater than 40%.
  ADEM Admin. Code R. 335-3-4-.01(1)(a) and (b)

Sulfur Dioxide (SO_2)
- The SO_2 emissions from each combustion turbine unit shall not exceed 0.90 lb/MWh gross output.
  40 CFR Part 60, Subpart KKKK [40 CFR 60.4330(a)(1)]
- The SO_2 emissions from each combustion turbine unit shall not exceed 0.060 lb/MMBtu heat input.
  40 CFR Part 60, Subpart KKKK [40 CFR 60.4330(a)(2)]
- If the fuel is demonstrated not to exceed potential sulfur emissions of 0.060 lb/MMBtu heat input, vendor certification may be used to show the maximum total sulfur content for fuel is 0.05 weight percent or less.
  40 CFR Part 60, Subpart KKKK [40 CFR 60.4365(a)]

Nitrogen Oxides (NOx)
- The NOx emissions from each combustion turbine unit shall not exceed 15 ppm at 15% O_2 when operating at 75% peak load or greater and shall not exceed 96 ppm at 15% O_2 when operating at less than 75% peak load.
  40 CFR Part 60, Subpart KKKK [40 CFR 60.4340(a)] and Table 1
- NOx emission from both combustion turbines shall not exceed 246 tons per rolling 12-month period.
  ADEM Admin. Code R. 335-3-14-.04(9)/Anti-PSD

Expected Emissions
Opacity
No visible emissions are expected while firing natural gas.

Sulfur Dioxide (SO_2)
Natural gas is the exclusive fuel for these units, resulting in an emission rate of approximately 0.00341 lb/MMBtu.

Nitrogen Oxides (NOx)
During initial compliance testing, the NOx emission rates from the units were below the permitted allowable emission limits. The following are the emission rates indicated by the initial performance testing:

Unit	NOx (ppm @ 15% O_2)	NOx (lb/MMBtu)
4	7.0	0.03
5	7.4	0.03

Periodic Monitoring
Opacity
Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of opacity is not considered necessary.

Sulfur Dioxide (SO_2)
According to 40 CFR 60.4365, a facility may elect not to monitor total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input. Based on the low expected emissions as compared to the regulatory allowable emission limits, periodic monitoring of sulfur dioxide emissions is not considered necessary.

Nitrogen Oxides (NOx)
- The simple-cycle combustion turbine units are required to operate continuously on the exhaust stack a NOx continuous emissions monitoring system (CEMS). The CEMS is used to demonstrate compliance with 40 CFR Part 60, Subpart KKKK and the Acid Rain Program.
  40 CFR Part 60, Subpart KKKK [40 CFR 60.4345] and 40 CFR Part 75

Continuous Assurance Monitoring (CAM)
No control equipment is utilized to meet any applicable emissions limitation and therefore, CAM does not apply to any pollutant emitted by these units.

Recordkeeping and Reporting Requirements
- Records documenting the sulfur content of the fuel burned in this unit shall be kept at the facility in a form suitable for inspection for a period of at least five years following said recording.
  ADEM Admin. Code R. 335-3-16-.05(c)
- An excess emissions report for the turbine stack as defined by 40 CFR Part 60, Subpart A, 60.7(c) and (d), shall be submitted to the Department by the 30th day following the end of each six-month period.
  40 CFR 60.334(j)
- Records which document rolling 12-month NOx emissions totals from Units 4 & 5 shall be submitted to the Department within 30 days of the end of each calendar quarter,

maintained in a form suitable for inspection, shall be maintained for a period of at least five years following said recording, and shall be made available upon request..
ADEM Admin. Code R. 335-3-14-.04(9) /Anti-PSD

- The facility shall comply with the recordkeeping and reporting requirements of CSAPR.
ADEM Admin. Code R. 335-3-5-.31, 335-3-5-.35, 335-3-8-.33, 335-3-8-.37, 335-3-8-.65, and 335-3-8-.69

Engine Requirements

There are three federal regulations that are potentially applicable to these sources. They are as follows:

40 CFR Part 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; commence construction after July 11, 2005

40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines; commence construction after June 12, 2006

There are two stationary reciprocating internal combustion engines (RICE) located at PowerSouth. The following engines are utilized for emergency purposes only:

- McIntosh Emergency Backup Generator (1542 BHP)
- McIntosh Fire Pump Engine (141 BHP)

Engine	Model Year	BHP	Ignition Type	Subject to:
Emergency Backup Generator	1989	1592	Compression	ZZZZ
Fire Pump Engine	1989	141	Compression	ZZZZ

1,592 HP Emergency Backup Engine

The engine is a 1592 BHP Model Year 1989 Caterpillar model number 3512STD, 4-stroke lean burn compression ignition Reciprocating Internal Combustion Engines (RICE). An inspection memo on June 13, 1991 references installed two engines. August 9, 1991 note states receipt of application for referenced engine. August 23, 1991 memo references that referenced engine was installed late 1991.

<u>Emission Standards</u>

- This unit must comply with the requirements of Table 2d-4 of this subpart.
  a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;
  b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and

c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.
40 CFR 63.6603(a) [Table 2d]

- This unit must comply with the applicable emission limitations and operating limitations of 40 CFR Part 63, Subpart ZZZZ.
  40 CFR 63.6605(a)
- This unit must be operated and maintained according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
  40 CFR 63.6640(a)

Monitoring/Testing

- Operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year is prohibited.
  40 CFR 63.6640(f)

- Operation of this unit for the purpose of maintenance checks and readiness testing is limited to 100 hours per year.
  40 CFR 63.6640(f)

Recordkeeping/Reporting

- The owner or operator of this unit must keep records of the hours of operation of the engine that are recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.
  40 CFR 63.6655(e) and (f)

Expected Emissions

Particulate Matter (PM)

Based on AP-42 emission factor and manufacturer's specifications, the PM emission rate is 3.5 lb/hr.

Sulfur Dioxide (SO_2)

Based on AP-42 emission factor and manufacturer's specifications, the SO_2 emission rate is 3.26 lb/hr.

Nitrogen Oxides (NOx)

Based on AP-42 emission factor and manufacturer's specifications, the NOx emission rate is 49.35 lb/hr.

Carbon Monoxide (CO)

Based on AP-42 emission factor and manufacturer's specifications, the CO emission rate is 10.63 lb/hr.

Volatile Organic Compounds (VOC)

Based on AP-42 emission factor and manufacturer's specifications, the VOC emission rate is 4.00 lb/hr.

141 HP Emergency Fire Pump Engine

The engine is a 141 bhp Model Year 1989 Caterpillar model number 3208, 4-stroke lean burn compression ignition Reciprocating Internal Combustion Engines (RICE). An inspection memo on June 13, 1991 references installed two engines. August 9, 1991 note states receipt of application for referenced engine. August 23, 1991 memo references that referenced engine was installed late 1991.

Emission Standards

- This unit must comply with the requirements of Table 2d-4 of this subpart.
  a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;
  b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and
  c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.

  40 CFR 63.6603(a) [Table 2d]
- This unit must comply with the applicable emission limitations and operating limitations of 40 CFR Part 63, Subpart ZZZZ.
  40 CFR 63.6605(a)
- This unit must be operated and maintained according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
  40 CFR 63.6640(a)
- During periods of startup, the facility must minimize the engines' time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engines, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Table 2c apply.
  40 FR 63.6625(h)
- The sources must comply with the following requirements:
  a. In order for the engine to be considered an emergency stationary RICE under the RICE MACT, any operation other than emergency operations, maintenance and testing, and operation in non-emergency situation for 50 hours per year is prohibited.
  b. If the engine is not operated according to the requirements in 40 CFR 63.6640(f)(1) through (3), the engine will not be considered an emergency engine under the RICE MACT and must meet all requirements for non-emergency engines.
  c. The emergency stationary RICE may operate for the purposes specified in 40 CFR 63.6640(f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed in 40 CFR 63.6640(f)(3) counts as part of the 100 hours per calendar year allowed.
  d. Emergency stationary RICE located at a major source of HAP may be operated for up to 50 hours per calendar year in non-emergency situations.

(1) The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 63.6640(f)(2).
(2) The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
40 CFR 63.6640(f)

Monitoring/Testing

- Provided that visible emissions, in excess of the opacity standards, are observed from the emergency engine at any time that the unit is operating, a visible emissions observation or visual inspection of the unit shall be conducted.
  Rule 335-3-4-.01(2)
  Rule 335-3-16-.05(c)(1)(i)
- The facility shall comply with one of the following work or management practices to demonstrate continuous compliance with the RICE MACT for applicable engines:
  a. Operate and maintain the stationary engine and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or,
  b. The facility may develop its own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions

  Rule 335-3-16-.05(c)(1)
  40 CFR 63.6640(a)
  40 CFR 63.6625(e), (e)(2)

Recordkeeping/Reporting

- The owner or operator of this unit must keep records of the hours of operation of the engine that are recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.
  40 CFR 63.6655(f)

Expected Emissions

Particulate Matter (PM)

Based on AP-42 emission factor and manufacturer's specifications, the PM emission rate is 0.31 lb/hr.

Sulfur Dioxide (SO_2)

Based on AP-42 emission factor and manufacturer's specifications, the SO_2 emission rate is 0.29 lb/hr.

Nitrogen Oxides (NOx)

Based on AP-42 emission factor and manufacturer's specifications, the NOx emission rate is 4.37 lb/hr.

Carbon Monoxide (CO)
Based on AP-42 emission factor and manufacturer's specifications, the CO emission rate is 0.94 lb/hr.

Volatile Organic Compounds (VOC)
Based on AP-42 emission factor and manufacturer's specifications, the VOC emission rate is 0.35 lb/hr.

Compliance Assurance Monitoring (CAM)
No control equipment is utilized to meet any applicable emissions limitation and therefore, CAM does not apply to any pollutant emitted by these units.

Recommendations
After reviewing state and federal regulations for newly promulgated or modified regulations, reviewing the permit application and existing permit for any changes, I recommend that PowerSouth Energy Cooperative, Inc. be issued a renewal for its McIntosh Power Plant operating under Major Source Operating Permit (MSOP) No.: 108-0012. The facility should be able to meet the requirements of this permit and all federal and state requirements.

_____ Draft
Toshia Martin Date
Air Division
Energy Branch