Bureau of Air
Curtis State Office Building
1000 SW Jackson, Suite 310
Topeka, KS 66612

Phone: 785-296-6421
Fax: 785-291-3953
mbowman@kdheks.gov
www.kdheks.gov/bar

Kansas

Robert Moser, MD, Secretary | Department of Health & Environment | Sam Brownback, Governor

DRAFT AIR EMISSION SOURCE CONSTRUCTION PERMIT

Source ID No.: 0670173

Effective Date: Draft, 2012

Source Name: Mid-Kansas Electric Company, LLC.

SIC Code: 4911, Electric Services

NAICS Code: 221112, Fossil Fuel Power Generation

Source Location: Northwest Quarter of Section 1, Township 29 South, Range 35 West
Grant County, Kansas

Mailing Address: 301 West 13th Street
P.O. Box 980
Hays, Kansas 67601-0980

Contact Person: Paul Reynolds
Senior Manager, Generation Engineering, Environment
Telephone: (620) 277-4522

This permit is issued pursuant to K.S.A. 65-3008 as amended.

I. Description of Activity Subject to Air Pollution Control Regulations

Mid-Kansas Electric Company, LLC (Mid-Kansas) plans to install 24 new spark ignition Caterpillar four stroke lean burn reciprocating internal combustion engine electricity generating units (EGUs) using pipeline quality natural gas at a new green field site to be known as Rubart Station. The proposed facility (the Project) will be located in Grant County, approximately 14 miles east of Ulysses, Kansas. Each EGU will be nominally rated at 10 megawatts (MW) of electricity for a combined power output of approximately 240 MW. The facility will also include two 450-kW pipeline quality natural gas fired emergency AC generators, a 190-HP diesel-fueled emergency fire pump, a two million British thermal units/hr (mmBtu/hr) natural-gas fired indirect fuel-gas heater, and circuit breakers and switchers. Sunflower Electric Power Corporation (Sunflower), on behalf of Mid-Kansas, will operate the generating units and the ancillary facilities and auxiliary equipment that will support the EGUs to be constructed under this permit.

The Project is designed to operate as required to support the load-following and voltage support requirements of the Mid-Kansas control area of the Southwest Power Pool. Mid-Kansas does not expect Rubart Station to operate as a "peaking facility."

The potential emissions of oxides of nitrogen (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), PM less than 10 microns (PM_{10}), lead, and hazardous air pollutants (HAPs) have been reviewed and the proposed project is subject to the provisions of **K.A.R. 28-19-300 (Construction permits and approvals; applicability)** because the potential emissions for NO_X, VOC, CO, PM, PM_{10}, and HAPs are above the permitting thresholds.

The Project is subject to the provisions of K.A.R. 28-19-720, New Source Performance Standards (NSPS). The EGUs and emergency AC generators are subject to the requirements of 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines. The emergency fire pump is subject to the requirements of 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines.

The Project is subject to the provisions of K.A.R. 28-19-750 Hazardous air pollutants; maximum achievable control technology, because the estimated potential–to-emit (PTE) of HAPs from the facility may be greater than 10 tons annually for a single HAP, and the estimated PTE of all HAPs in the aggregate may be greater than 25 tons/year. All engines are subject to 40 CFR Part 63, Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines. The owner or operator will conduct performance tests to determine the facility's PTE after startup to confirm applicability. If the PTE is less than major source thresholds, then the facility will be an area source and will be required to comply with applicable requirements of 40 CFR Part 63 Subpart ZZZZ for area sources of HAP emissions.

On November 29, 2010, **K.A.R. 28-19 350**, **Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR Part 52.21,** was amended to adopt language from 75 Federal Register 61606 and 61607, which amended 40 CFR 52.21, *Prevention of Significant Deterioration (PSD)* to incorporate Greenhouse Gases (GHGs) regulatory provisions. Beginning July 1, 2011, new sources emitting GHGs in excess of 100,000 tons/yr on a carbon dioxide equivalent (CO_2e) basis and also exceeding 100/250 tons/yr on a mass basis are subject to PSD permitting requirements for their GHG emissions. For those affected facilities, Best Available Control Technology (BACT) is to be determined for GHG emissions.

The facility is a new major stationary source for at least one regulated pollutant (CO_2e, NO_X, CO, and VOC) and subject to the requirements of 40 CFR 52.21 as adopted under K.A.R. 28-19-350. As a result, the potential emissions of NO_X, CO, SO_2, VOC, PM, PM_{10}, $PM_{2.5}$, lead, and sulfuric acid mist (H_2SO_4) were evaluated. The PTE of, NO_X, CO, VOC, PM, PM_{10}, particulate matter less than 2.5 microns ($PM_{2.5}$), and CO_2e were determined to be above the PSD significance thresholds**.** Pursuant to 40 CFR 52.21, since NO_X and VOC emissions for the proposed facility are significant, emissions of ozone (O_3) precursors are deemed significant. NO_X and VOC are precursors and therefore surrogates for O_3, and NO_X and VOC emission rates and controls will be deemed emission rates and controls for O_3.

Pursuant to PSD requirements, an air dispersion modeling impact analysis, an additional impact analysis, and a BACT determination were conducted as a part of the construction permit application process. An air dispersion modeling impact analysis was performed for nitrogen dioxide (NO_2), CO, PM_{10}, and $PM_{2.5}$.

BACT-based emission limitations were determined for all emission units, including fugitive sources, and activities which have the potential to emit NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5}$ and CO_2e.

II. Significant Applicable Air Pollution Control Regulations

A. K.A.R. 28-19-11, Exceptions due to breakdown or scheduled maintenance – as applied to state regulations K.A.R. 28-19-30 through 32 and K.A.R. 28-19-650.

B. K.A.R. 28-19-30 through 32, Indirect heating equipment emissions.

C. K.A.R. 28-19-275, Special provisions; acid rain deposition.

D. K.A.R. 28-19-300, Construction permits and approvals; applicability.

E. K.A.R. 28-19-350, which adopts by reference 40 CFR 52.21, Prevention of significant deterioration of air quality.

F. K.A.R. 28-19-500, Operating permit; applicability.

G. K.A.R. 28-19-650, Emissions opacity limits.

H. K.A.R. 28-19-720, which adopts by reference 40 CFR Part 60, New Source Performance Standards.

I. K.A.R. 28-19-750, which adopts by reference 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants.

J. 40 CFR Part 60, Subpart A, General Provisions.

K. 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

L. 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

M. 40 CFR Part 63, Subpart A, General Provisions.

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

O. 40 CFR Part 72, Subpart A, Acid Rain Program General Provisions.

III. Air Emission Unit Technical Specifications

The following equipment or equivalent is approved:

A. Twenty-four new spark ignition 4SLB RICE EGUs, [Caterpillar model G20CM34], used to generate electricity. The generating capacity of each EGU will be 10 megawatts (approximately 13,410 BHP). Each EGU shall be equipped with a selective catalytic reduction (SCR) system and an oxidation catalyst, and shall burn only natural gas for fuel. The EGUs are subject to the requirements of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ. The EGUs are subject to the requirements of K.A.R. 28-19-350, Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR 52.21. The EGUs are subject to BACT for NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5}$, and CO_2e.

B. Two spark ignition emergency AC generators, each rated at 450 kW (approximately 604 BHP), which shall burn only natural gas for fuel for the purpose of providing emergency power. These generators are subject to the requirements of 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ, K.A.R. 28-19-350, Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR 52.21. These generators are subject to BACT for NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5}$, and CO_2e.

C. One compression ignition emergency fire pump engine, rated at 190 HP, which shall burn only ultra-low sulfur diesel (ULSD, 15 ppm sulfur or less). This unit is subject to the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. This fire pump is subject to the requirements of K.A.R. 28-19-350, Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR 52.21. This unit is subject to BACT for NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5}$, and CO_2e.

D. One indirect fuel-gas heater, rated at 2 mmBtu/hr heat input, which shall only burn natural gas, for the purpose of heating the natural gas fuel prior to combustion in the Caterpillar 4SLB RICE. This heater is subject to the requirements of K.A.R. 28-19-350, Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR 52.21. This heater is subject to BACT for NO_X, CO, VOC, PM, PM_{10}, $PM_{2.5}$, and CO_2e.

E. A maximum of twelve circuit breakers and four circuit switchers that are electric grid control devices and will contain small amounts of the gaseous dielectric sulfur hexafluoride (SF6). These devices are subject to the requirements of K.A.R. 28-19-350, Prevention of Significant Deterioration (PSD) of Air Quality, which adopts by reference 40 CFR 52.21. These devices are subject to BACT for CO_2e.

IV. Air Emission Estimates from the Proposed Activity

The following table contains the PTE for air pollutants to be emitted from the proposed Project:

Table 1. Estimated Emissions	
Pollutant	**Potential-to-emit (PTE)[1] (tons per year)**
NO_X [2]	400.6
CO	897.2
SO_2	14.6
VOC	684.7
PM	26.3
PM_{10} and $PM_{2.5}$	151.2
Lead	4.3×10^{-6}
H_2SO_4	2.2
Total HAPs	483.3
Individual Hazardous Air Pollutants (HAPs)[3]	
-Formaldehyde	225.0
-Acetaldehyde	144.5
-Acrolein	89.4
Carbon Dioxide Equivalent (CO_2e) Greenhouse Gases (GHG)[4]:	1,194,003.4
-Carbon Dioxide (CO_2)	1,192,849.3
-Methane (CH_4)	433.9
-Nitrous Oxide (N_2O)	675.6
-Sulfur Hexafluoride (SF_6)	44.7

[1] Potential-to-emit (PTE) means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

[2] NO_X and VOC emissions for the Project exceed the 40 tons significance threshold. Therefore pursuant to 40 CFR 52.21, the Project is also significant for O_3. Since NO_X and VOCs are surrogates for O_3, BACT for NO_X and VOC will be considered BACT for O_3.

[3] Only the three individual HAPs with the largest PTE have been listed, which account for 95% of total HAPs. For detailed HAPs PTE estimates, which include all HAPs, refer to the Permit Application submitted July 10, 2012, Appendix C.

[4] Greenhouse gas emissions are converted to CO_2-based equivalence.

V. State Regulatory Requirements

A. K.A.R. 28-19-30 through 32

1. K.A.R. 28-19-31(a) limits filterable particulate matter emissions from the fuel-gas heater to 0.6 lb/MMBtu, except as provided in 28-19-11.

2. K.A.R. 28-19-31(b) limits visible contaminant emissions from the fuel-gas heater to less than 20 percent opacity, except as provided in K.A.R. 28-19-11.

B. K.A.R 28-19-650(a)(3)

Opacity of any visible emissions from any new source is limited to less than 20 percent opacity, except as provided in K.A.R. 28-19-11.

C. Notification

Notify the Southwest District Office Air Program Field Staff at the Dodge City Office, 302 West McArtor Road, (620) 356-1075, within 30 days after construction is complete so that an evaluation may be conducted.

VI. K.A.R. 28-19-350 Prevention of Significant Deterioration

A. BACT Emission Limitations

1. The emission of pollutants from each EGU shall be no greater than the specified limitations listed below. 40 CFR Part 60 Subpart JJJJ requirements are included in a separate section of the permit as applicable. A violation of a BACT limitation is not necessarily a violation of an NSPS limitation. NSPS limitations are not applicable during startup, shutdown, or malfunction. For the purpose of demonstrating ongoing compliance with BACT-based emission limitations, startup ends 30 minutes after a start sequence is initiated.

   a. The emission of NO_X shall not exceed 2.13 lb/hour at all times except during startup (1-hour averaging period). This limitation is less than the NSPS limitation of 1.0 g/hp-hour (approximately 29.6 lb/hour at 100% load), and the NSPS limitation is therefore subsumed in the BACT emission limitation.

   b. The emission of CO shall not exceed 3.86 lb/hour at all times except during startup (1-hour averaging period). This limitation is less than the NSPS limitation of 2.0 g/hp-hour (approximately 59.1 lb/hour at 100% load), and the NSPS limitation is therefore subsumed in the BACT emission limitation.

c. The emission of VOC shall not exceed 5.82 lb/hour at all times except during startup (1-hour averaging period). This limitation is less than the NSPS limitation of 0.7 g/hp-hour (approximately 20.7 lb/hour at 100% load), and the NSPS limitation is therefore subsumed in the BACT emission limitation.

d. The emission of PM[5] shall not exceed 0.25 lb/hour at all times, including startup (30-day averaging period).

e. The emission of PM_{10}[6] and $PM_{2.5}$[7] shall not exceed 1.31 lb/hour at all times except during startup (24-hour averaging period).

f. The emission of CO_2e shall not exceed 10,692 lb/hour at all times except during startup (annual averaging period).

g. The emission of NO_X shall not exceed 14.41 lb/hour during startup (1-hour averaging period).

h. The emission of CO shall not exceed 39.23 lb/hour during startup (1-hour averaging period).

i. The emission of VOCs shall not exceed 8.44 lb/hour during startup (3-hour averaging period).

j. The emission of PM_{10} and $PM_{2.5}$ shall not exceed 1.68 lb/hour during startup (24-hour averaging period).

k. The emission of CO_2e shall not exceed 10,476 lb/hour during startup (annual averaging period).

2. The BACT emission of pollutants from each of the emergency AC generators shall be no greater than limitations specified below, excluding periods of startup, shutdown, and malfunction.

a. The emission of NO_X shall not exceed 2.0 g/hp-hr.

b. The emission of CO shall not exceed 4.0 g/hp-hr.

c. The emission of VOC shall not exceed 1.0 g/hp-hr.

d. The emissions of PM, PM_{10}, and $PM_{2.5}$ shall not exceed 7.6E-5 g/hp-hr.

e. BACT for CO_2e shall be the selection of the most efficient engine that meets the facility's needs.

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[5] The term "PM" as used in this permit means that particulate matter (existing as a solid) emitted by a source that can be quantified by analysis under US EPA approved Reference Method 5 as set forth in Appendix A of 40 CFR Part 60.

[6] The term "PM_{10}" as used in this permit means that particulate matter (existing as solid, liquid, and gaseous form) emitted by a source that can be quantified by analysis either by EPA-approved Reference Methods 5 and 202 or by Methods 201A and 202 (with appropriate cyclone-sizing devices appropriate for quantification of PM_{10}), or other such EPA approved test methods.

[7] The term "$PM_{2.5}$" as used in this permit means that particulate matter (existing as solid, liquid, and gaseous form) emitted by a source that can be quantified by analysis either by EPA approved Reference Methods 5 and 202 or by Methods 201A and 202 (with appropriate cyclone sizing devices appropriate for the quantification of $PM_{2.5}$) or other such EPA approved test methods.

3. The BACT emission of pollutants from the emergency fire pump shall be no greater than limitations specified below, excluding periods of startup, shutdown, and malfunction.
   a. The emission of NO_X shall not exceed 3.0 g/hp-hr.
   b. The emission of CO shall not exceed 2.6 g/hp-hr.
   c. The emission of VOC shall not exceed 1.14 g/hp-hr.
   d. The emissions of PM, PM_{10}, and $PM_{2.5}$ shall not exceed 0.15 g/hp-hr.
   e. BACT for CO_2e shall be the selection of the most efficient engine that meets the facility's needs.
4. The BACT emissions of pollutants from the indirect fuel-gas heater shall be no greater than limitations specified below, excluding periods of startup, shutdown, and malfunction.
   a. The emission of NO_X shall not exceed 0.20 lb/hr.
   b. The emission of CO shall not exceed 0.16 lb/hr.
   c. The emission of VOC shall not exceed 0.011 lb/hr.
   d. The emissions of PM, PM_{10}, and $PM_{2.5}$ shall not exceed 0.015 lb/hr.
   e. BACT for CO_2e shall be use of clean fuels, and proper maintenance and operation of the heater.

B. <u>Operating Limitations</u>

1. The owner or operator shall maintain the NO_X reactor catalyst for each EGU so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10% from the pressure drop that was measured during the initial performance test.
2. The owner or operator shall maintain the exhaust temperature of the EGU so that the oxidation catalyst inlet temperature is between 450°F and 1350°F.
3. In accordance with the manufacturer's recommendations, the owner or operator shall install, calibrate, operate, and maintain a flow meter to measure and record the urea injection rate for the SCR control system for each EGU. The owner or operator shall document the range of urea flow rates required to meet the NOx emission limitation in A. BACT Emission Limitation 1a.
4. Only one of the emergency AC generators shall be operated at a time.
5. Neither the emergency AC generators nor the emergency fire pump shall be operated for more than 100 hours per year for testing and maintenance. Emergency use is not limited.
6. Only pipeline quality natural gas[8] shall be burned in the EGUs, the emergency AC generators, and the indirect fuel-gas heater.

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[8] Pipeline quality natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced

7. Only ULSD (less than 15 ppm sulfur) shall be burned in the emergency fire pump.

8. The owner or operator shall install only state-of-the art enclosed pressure SF_6 circuit breakers and switchers with a guaranteed loss rate of 0.5% by weight or less by year.

9. The owner or operator shall install and operate a density monitor alarm system for the SF_6 circuit breakers and switchers.

10. The owner or operator shall develop and implement a written leak detection and repair (LDAR) for the SF_6 circuit breakers and switchers.

11. The owner or operator shall operate and maintain all emission units, air pollution control equipment, and monitoring equipment in accordance with the manufacturer's recommendations, in a manner consistent with good combustion practices for minimizing emissions at all times, including periods of startup, shutdown, and malfunction, and in accordance with the manufacturer's recommendations.

12. Stack parameters for all equipment listed under Section III, Air Emissions Unit Technical Specifications, including but not limited to stack heights, stack diameters, exhaust temperatures, emission rates, and exit velocities, shall be consistent with data provided for the dispersion modeling analysis. Actual operational conditions shall be consistent with data provided for the dispersion modeling analysis.

C. Compliance

1. Compliance with A. BACT Emission Limitations 1 is established by performance testing as identified in D. Performance Testing.

2. Compliance with A. BACT Emission Limitations 2a through c is established by demonstrating compliance with 40 CFR Part 60 Subpart JJJJ.

3. Compliance with A. BACT Emission Limitations 3a through c is established by demonstrating compliance with 40 CFR Part 60 Subpart IIII.

4. Compliance with A. BACT Emission Limitations 2d, 2e, 3d, 3e, and 4 is established by the BACT analysis and emissions calculations submitted with the permit application.

D. Performance Testing Requirements

1. When conducting the compliance performance tests required by this permit, the reference test methods and procedures identified in K.A.R. 28-19-212 and/or EPA-approved test methods shall be used to demonstrate compliance with the limitations and conditions set forth in this permit.

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in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions and which is provided by a supplier through a pipeline. Pipeline quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot. The H_2S content shall be less than 4 ppm per 100 cubic feet of gas.

2. For each EGU, an initial performance test shall be conducted within 180 days after startup to demonstrate compliance with each BACT emission limitation as specified in C. Compliance, except CO_2e BACT limitations. Each engine shall be tested to demonstrate compliance with each limitation, except the CO_2e BACT limitation no less frequently than every five years. This testing schedule shall not supersede performance test requirements for any applicable federal rules.

3. For each EGU, an initial performance test shall be conducted to demonstrate compliance with the CO_2e emission limitation within 180 days after startup. The performance test shall consist of testing for CO_2 emissions only, which account for 99.8% of total CO_2e emissions.

4. Except for performance tests conducted to demonstrate compliance with startup emission limitations, performance tests shall be conducted at no less than 90% of maximum load conditions.

5. A performance test protocol identifying proposed test methods and the proposed test schedule shall be submitted 60 days prior to testing and the protocol is subject to KDHE approval.

E. Monitoring Requirements

1. For each EGU, a continuous monitoring parameter system (CPMS) shall be installed, and monitoring parameters shall be established during the initial performance test. The CPMS shall take a minimum of four readings per hour. The following parameters shall be monitored:

   a. SCR urea injection rate (range to be determined during the performance test);

   b. Oxidation catalyst inlet temperature (maintain the temperature of the EGU exhaust so that the catalyst inlet temperature is between 450°F and 1350°F); and

   c. Catalyst bed pressure drop (maintain the catalyst pressure drop so that the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10% from pressure drop across the catalyst that was measured at initial performance test).

2. For the circuit breakers and switchers, the owner or operator shall monitor SF_6 emissions by measuring the SF_6 lost and using a conversion factor to assess annual SF_6 fugitive emissions in terms of CO_2e.

3. For the circuit breakers and switchers, the owner or operator shall implement a density monitor alarm system with a threshold of 10%, that is, the alarm will alert controllers when the circuit breakers and circuit switchers lose 10% of the SF_6. In the event of an alarm, the owner or operator will investigate the event and take any necessary corrective action to address any problems.

F. Recordkeeping Requirements

1. The owner or operator shall maintain records of the hours of operation of the emergency AC generators and the emergency fire pump.

2. The owner or operator shall maintain records of fuel analysis for all emission units demonstrating that only pipeline quality natural gas and ULSD were burned as required by this permit.

3. The owner or operator shall develop and maintain a record of all startup and malfunction activities, including malfunction in the operation of each unit and any malfunction of any air pollution control equipment. The record shall also include all maintenance activities including the nature of all repairs taken to correct malfunction incidents.

4. Records shall be kept documenting each performance test conducted. In addition, records shall be kept of CPMS monitoring parameters compared to the ranges required by B. Operating Limitations.

5. The owner or operator shall maintain CPMS records that include the occurrence and duration of any startup, shutdown, or malfunction; performance testing; evaluations; calibrations; checks; adjustments; maintenance; duration of any periods during which a CPMS is inoperative; and corresponding measurement during which parameters established are outside the range established in this permit. Records shall be kept on site and in a form readily available for inspection.

6. The owner or operator shall keep a copy of the SF_6 circuit breakers and switchers LDAR program and documentation regarding observations and/or repairs made in accordance with the LDAR program. If requested, this documentation shall be provided to KDHE.

7. The owner or operator shall keep records of the type and/or specifications of each emission unit installed at the proposed station.

8. The owner or operator shall keep records relating to maintaining good combustion practices for each emission unit in accordance with the manufacturer's recommendation to maintain efficiency of the combustion sources.

9. All records shall be retained for two years from the date of record.

G. <u>Reporting Requirements</u>

1. The owner or operator shall submit semiannual reports detailing compliance with the emission and operating limitations established in this permit; emissions measured or calculated shall be expressed in the same units as the BACT emission limitations. These reports shall be submitted within 30 days following the end of each calendar half-year and shall include:

   a. The company name and address of the facility.

   b. An identification of each emission unit being included in the semiannual report.

   c. Beginning and ending dates of the reporting period.

   d. Excess emissions and CPMS monitor downtime. The owner or operator shall report excess emissions for all periods of unit operation, including startup, shutdown, and malfunction.

   e. A summary of startup, shutdown, malfunction events which occurred during the reporting period.

2. The owner or operator must notify KDHE by telephone, facsimile, or electronic mail transmission within two working days following the discovery of any failure of air pollution control equipment, process equipment, or process to operate in a normal manner which results in an increase in emissions above any allowable emission limitation. In addition, the owner or operator must notify KDHE in writing within ten days of any such failure. The written notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed, and the methods utilized to mitigate emissions and restore normal operation.

3. If significant changes are made, or modeling parameters are not representative of site conditions, the owner or operator shall document compliance with the applicable NAAQS and allowable PSD increment consumption and submit documentation of compliance to KDHE prior to making the change(s). KDHE has final authority in determining what constitutes a significant change. If modeling indicates a potential NAAQS or increment exceedance, then mitigation shall be required.

VII. 40 CFR Part 60 Subpart IIII

A. Emission Limitations

Pursuant to 40 CFR 60.4205(c), the owner or operator of the emergency fire pump engine, shall comply with the applicable emission standards in Table 4 of 40 CFR 60 Subpart IIII. The owner or operator shall also meet the requirements of §60.4206. In accordance with Table 4 of 40 CFR 60 Subpart IIII, the emergency fire pump engine NMHC+ NO_X emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr), CO emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr), and PM emissions shall not exceed 0.2 g/kW-hr (0.15 g/hp-hr) over the life of the engine. The engine shall be certified by the manufacturer to meet these emission limits per 40 CFR 60.4202(d).

B. Operating Limitations

1. For the emergency fire pump engine, the owner or operator shall comply with applicable diesel fuel requirements of 40 CFR 60.4207.

2. For the emergency fire pump engine, the provisions of 40 CFR 60.4211(f) apply. Maintenance checks and readiness testing is limited to 100 hours per year, of which up to 50 hours per year may be for non-emergency situations. There is no time limit on the use of the emergency fire pump in emergency situations.

C. Monitoring Requirements

If the emergency fire pump engine does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter prior to startup of the engine, as specified in 40 CFR 60.4209.

D. Compliance Requirements

For the emergency fire pump engine, the owner or operator must install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions. The owner or operator must not change emission-related settings in a way that is not permitted by the manufacturer, or thereafter demonstrate compliance as specified at 40 CFR 60.4211(g)(2).

E. Recordkeeping Requirements

For the emergency fire pump engine, the owner or operator must keep records of the emergency and non-emergency operations of the engine through a non-resettable hour meter if it does NOT meet the standards applicable to the non-emergency engines in the applicable model year. The times of operation and the reasons for operation must be recorded, as specified in 40 CFR 60.4214(b).

F. Applicability of Federal Rule General Provisions

For the emergency fire pump engine, 40 CFR 60.4218 identifies the Subpart A requirements that are applicable.

G. Additional Provisions

The owner or operator shall comply with all requirements of 40 CFR Part 60 Subpart IIII. These requirements are summarized in this permit. If a conflict exists between the federal rule and the permit, the requirements of the federal rule shall take precedence.

VIII. 40 CFR Part 60 Subpart JJJJ

A. Emission Limitations

1. For each EGU, the owner or operator shall comply with the requirements of 40 CFR 60.4233(e) and §60.4234. These regulations require the owner or operator to meet the applicable emission limitations in Table 1 of 40 CFR 60 Subpart JJJJ for the EGUs over their entire lives. Table 1 of 40 CFR 60 Subpart JJJJ provides the following emission limitations for the EGUs:

   a. Emission of NO_X is limited to no more than 1.0 g/hp-hour or 82 ppmvd at 15% O_2.

   b. Emission of CO is limited to no more than 2.0 g/hp-hour or 270 ppmvd at 15% O_2. Owners or operators of engines located at major sources that are meeting the requirements of 40 CFR Part 63, Subpart ZZZZ Table 2a do not have to comply with this standard as specified in Table 1.

   c. Emission of VOC is limited to no more than 0.7 g/hp-hour or 60 ppmvd at 15% O_2.

2. For each emergency AC generator, the owner or operator shall comply with the requirements of 40 CFR §60.4233(e) and§60.4234. These regulations require the engines to comply with the applicable requirements of Table 1 of 40 CFR 60 Subpart JJJJ over their entire lives. Table 1 of 40 CFR 60 Subpart JJJJ (Emergency, HP≥130) provides the following emission standards for the engines:

a. Emission of NO_X is limited to no more than 2.0 g/HP-hr or 160 ppmvd at 15% O2.

b. CO emission is limited to no more than 4.0 g/HP-hr or 540 ppmvd at 15% O2.

c. VOC emissions are limited to no more than 1.0 g/HP-hr or 86 ppmvd at 15% O2.

3. The emergency AC generator engines shall be certified by the manufacturer to meet the emissions limitations in accordance with 40 CFR 60.4243(b)(1).

B. Monitoring Requirements

For each emergency AC generator engine, if the engine does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter, as required by 40 CFR 60.4237(a).

C. Compliance Requirements

1. For each EGU, performance testing shall be conducted in accordance with 40 CFR 60.8(a) within 60 days of reaching maximum production rate, but not later than 180 days after initial startup.

2. For each EGU, and as required by 40 CFR 60.4243(b)(2)(ii), the owner or operator must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. The owner or operator shall comply with the requirements of 40 CFR 60.4243(b)(2)(ii) to conduct an initial performance test and conduct subsequent performance testing every 8760 hours or three years, whichever comes first, thereafter to demonstrate compliance.

3. For the emergency AC generator engines, the owner or operator must demonstrate compliance as specified in 40 CFR 60.4243(b)(1) by operating and maintaining the certified engine and control device according the manufacturer's emission-related written instructions. If the engine settings are adjusted according to and consistent with the manufacturer's instruction, the engine will not be considered out of compliance (40 CFR 60.4243(a)(1)). If the certified engine and control device are operated and maintained according to the manufacturer's instruction, the owner or operator must comply with 40 CFR 60.4243 (a)(2)(i) through (a)(2)(iii).

4. For the emergency AC generator engines, the provisions of 40 CFR 60.4243(d) apply. Maintenance checks and readiness testing is limited to 100 hours per year per generator, of which up to 50 hours per year may be for non-emergency situations. There is no time limit on the use of the Emergency AC Generator Engines in emergency situations.

D. Performance Testing Requirements

For each EGU, each performance test must be conducted following the requirements of §60.4244 and according to the requirements in §60.8 and under the conditions specified in Table 2.

E. Notification, Reporting, and Recordkeeping Requirements

1. For each of the EGUs, the owner or operator shall comply with the recordkeeping requirements of 40 CFR 60.4245(a).

2. For each EGU, the owner or operator shall comply with the notification requirements of 40 CFR 60.4245(c).

3. For each EGU, the owner or operator shall comply with the reporting requirement outlined in 40 CFR 60.4245(d), which requires the owner or operator to submit a copy of each performance test within 60 days after the test has been completed.

4. For each emergency AC generator, the owner or operator shall keep all of the records as required by 40 CFR 60.4245(a)(1) through (4).

5. For each emergency AC generator engine, if the owner or operator that does not purchase a certified engine must comply with the initial notification requirements of 40 CFR 60.4245(c).

F. Applicability of Federal Rule General Provisions

1. For the EGUs, the owner or operator is required to follow 40 CFR Part 60 Subpart A General Provisions requirements outlined in 40 CFR 60.4246 and in Table 3, which excludes the monitoring requirements of 40 CFR 60.13 and the general control device requirements in 40 CFR 60.18.

2. For the emergency AC generators, 40 CFR 60.4246 and Table 3 identifies the Subpart A requirements that are applicable.

G. Additional Provisions

The owner or operator shall comply with all requirements of 40 CFR Part 60 Subpart JJJJ which requirements are summarized in this permit. If a conflict exists between the federal rule and the permit, the requirements of the federal rule shall take precedent.

IX. 40 CFR Part 63 Subpart ZZZZ

A. Emission Limitations

For each EGU, the owner or operator shall comply with the requirements 40 CFR 63.6600(b) and at Table 2a. Each EGU emission control system is required to reduce CO emissions by 93 percent or more; or limit the concentration of formaldehyde in the exhaust to 14 ppmvd or less at 15 percent O_2.

B. Operating Limitations

For each EGU, the owner or operator shall comply with the requirements 40 CFR 63.6600(b) at Table 2b, and which are summarized in this permit.

C. Performance Testing Requirements

1. For each EGU, the owner or operator shall comply with 40 CFR 63.6610(a) and Table 4. The owner or operator must conduct the initial performance test within 180 days after the compliance date that is specified in 40 CFR 63.6595 and according to the provisions of 40 CFR 63.7(a)(2). Requirements are outlined in Table 4, Item 1a for compliance with the requirement to reduce CO emissions, and are outlined in Table 4, Item 3a for compliance with the requirement to limit the concentration of formaldehyde in the exhaust.

2. For each EGU, the owner or operator shall comply with the requirements of 40 CFR 63.6615 to conduct subsequent performance tests as specified in Table 3. Requirements are outlined in Table 3, Item 1 for compliance with the requirement to reduce CO emissions, and are outlined in Table 3, Item 3 for compliance with the requirement to limit the concentration of formaldehyde in the exhaust.

3. For each EGU, the owner or operator shall follow the performance test and other procedures requirements of 40 CFR 63.6620.

D. Monitoring, Installation, Collection, Operation, and Maintenance **Requirements**

1. For each EGU, the owner or operator shall comply with the requirements of 40 CFR 63.6625(b) to install a continuous parameter monitoring system (CPMS) as specified in Table 5. The owner or operator must install, operate, and maintain each CPMS according to the requirements of 40 CFR 63.6625(b).

2. For each EGU, the owner or operator shall comply with the requirements of 40 CFR 63.6625(h) to minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to conditions other than startup in Table 2a shall apply.

E. Initial Compliance

1. For the EGUs, the owner or operator shall comply with the following requirements of 40 CFR 63.6630 to demonstrate initial compliance with emission limitations and operating limits:

   a. Comply with each emission and operating limitation that applies in Table 5.

   b. Establish each operating limitation in Table 2b that applies.

   c. Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 CFR 63.6645.

F. Continuous Compliance

1. For each EGU, the owner or operator must be in compliance with the applicable emission limitations and operating limitations in 40 CFR 63 Subpart ZZZZ at all times as provided in 40 CFR 63.6605.

2. 40 CFR 63.6605(b) requires that the owner or operator must operate and maintain the engines, including their associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to KDHE which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

3. For each EGU, the owner or operator shall comply with the requirements of 40 CFR 63.6635 to monitor and collect data to demonstrate continuous compliance.

4. For each EGU, except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, the owner or operator must monitor continuously at all times that the EGU is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

5. For each EGU, the owner or operator may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The owner or operator must use all the valid data collected during all other periods.

6. For each EGU, the owner or operator shall comply with the following requirements of 40 CFR 63.6640 to demonstrate continuous compliance with emission limitations and operating limitations:

   a. According to 40 CFR 63.6640(a), the owner or operator must demonstrate continuous compliance with each emission limitation and operation limitation in Tables 2a and 2b according to the methods specified in Table 6 of 40 CFR 63 Subpart ZZZZ.

   b. According to 40 CFR 63.6640(b), the owner or operator must report each instance in which the EGU does not meet each emission limitation or operating limitation in Tables 2a and 2b or 40 CFR 63 Subpart ZZZZ. These instances are deviations from the emissions and operating limitations in 40 CFR 63 Subpart ZZZZ. These deviations must be reported according to the requirements in 40 CFR 64.6650. If the catalyst is changed, the owner or operator must reestablish the values of the operating parameters measured during the initial performance test. The owner or operator must also conduct a performance test to demonstrate compliance with the required emission limitation applicable to the EGU.

   c. According to 40 CFR 63.6640(d), deviations from the emission or operating limitations that occur during the first 200 hours of operation from the initial startup (engine burn-in period) are not violations.

   d. The owner or operator must report each instance in which the applicable requirements in Table 8 to 40 CFR 63 Subpart ZZZZ are not met.

G. <u>Notification Requirements</u>

1. For each EGU, the owner or operator shall comply with the notification requirements of §63.6645. These include but are not limited to the following:

   a. According to 40 CFR 63.6645(a), submit all of the notifications required at 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) by the dates specified.

   b. According to 40 CFR 63.6645(c), submit an Initial Notification not later than 120 days after the facility becomes subject to 40 CFR Part 63 Subpart ZZZZ.

   c. According to 40 CFR 63.6645(g), submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in 40 CFR 63.7(b)(1).

d. According to 40 CFR 63.6645(h), submit a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii). For each initial compliance demonstration required in Table 5 that includes a performance test conducted according to the requirements in Table 3 the owner or operator shall submit the Notification of

Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to 40 CFR 63.10(d)(2).

2. For the emergency AC generator, the owner or operator shall comply with the notification provisions of 40 CFR 63.6645(f), which shall include a statement that the engines have no additional requirements and the basis of that exclusion.

H. Reporting Requirements

For each EGU, the owner or operator shall comply with the applicable reporting requirements of 40 CFR 63.6650 and in Table 7 of 40 CFR 63 Subpart ZZZZ.

I. Recordkeeping Requirements

1. For each EGU, the owner or operator shall comply with the applicable recordkeeping requirements of 40 CFR 63.6655 and in Table 6 of 40 CFR 63 Subpart ZZZZ.

2. For each EGU, the owner or operator must keep records in the form and for the length of time specified in 40 CFR 63.6660.

J. Applicability of Federal Rule General Provisions

For each EGU, the owner or operator is required to follow the applicable requirements of 40 CFR Part 63 Subpart A General Provisions to as specified in 40 CFR 63.6665 and outlined in Table 8 of 40 CFR 63 Subpart ZZZZ.

K. Additional Provisions

1. The facility has prepared the permit application as if the facility will comply with 40 CFR Part 63 Subpart ZZZZ as a major source of HAPs. This permit summarizes requirements for a major source. The owner or operator intends to conduct HAPs testing upon startup to measure the facility's PTE and determine the facility's status as a major source or as an area source as defined in 40 CFR Part 63 Subpart ZZZZ. If the owner or operator is able to demonstrate the facility's status as an area source, then only area source requirements shall apply (refer to 40 CFR 63.6590(c)), and major source requirements summarized in this permit shall not apply. If the owner or operator demonstrates status as an area source, performance testing to confirm this status shall be demonstrated once during every 5-year period.

2. The facility shall comply with all requirements of 40 CFR Part 63 Subpart ZZZZ. Requirements are summarized in this permit. If a conflict exists between the federal rule and the permit, requirements of the federal rule shall take precedent.

X. 40 CFR Part 72 Subpart A

The EGUs are considered to be new utility units under 40 CFR 72.6. 40 CFR 72.7(b) states that any new utility unit that has not previously lost an exemption under 40 CFR 72.7(f)(4) and that meets provisions of 40 CFR 72.7(a) shall be exempt from the Acid Rain Program, except for the provisions of 40 CFR 72.2 through 72.6, and 72.10 through 72.13. This exemption shall be effective on January 1 of the first full calendar year for which the unit meets these requirements. By December 31 of the first year for which the unit is to be exempt, a statement signed by the designated representative or certifying official shall be submitted to the KDHE Bureau of Air. The statement shall identify the unit, state the nameplate capacity of each generator served by the unit and the fuels currently burned or expected to be burned by the unit and their sulfur content by weight, and state that the owners and operators of the unit will comply with 40 CFR 72.7(f).

XI. Title V

K.A.R. 28-19-500 requires the owner or operator to obtain a Title V (Class I) Operating Permit for the facility. A complete application shall be submitted within one year of the initial startup of this facility as specified in K.A.R. 28-19-510.

XII. Permit General Provisions

A. This document will become void if construction or modification has not commenced within 18 months of the effective date, or if the construction or modification is interrupted for a period of 18 months or longer. [K.A.R. 28-19-301(c)].

B. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes which results in an increase of potential-to-emit equal to or greater than the thresholds specified at K.A.R. 28-19-300(a) and (b).

C. Upon presentation of credentials and other documents as may be required by law, representatives of KDHE (including authorized contractors of KDHE) shall be allowed to:

1. enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records shall be kept under conditions of this document;
2. have access to and copy, at reasonable times, any records that shall be kept under conditions of this document;
3. inspect at reasonable times, any facilities, equipment (including monitoring and control equipment) practices or operations regulated or required under this document; and
4. sample or monitor, at reasonable times, for the purposes of assuring compliance with this document or as otherwise authorized by the Secretary of KDHE, any substances or parameters at any location.

D. The emission unit or stationary source, which is the subject of this document, will be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the federal Clean Air Act.

E. This document is subject to periodic review and amendment as deemed necessary to fulfill the intent and purpose of the Kansas Air Quality Statutes and Regulations and rules promulgated in accordance therewith.

F. This document does not relieve the permittee of the obligation to obtain all other approvals, permits, licenses, or documents of sanction, which may be required by other federal, state or local government agencies.

Permit Writer

_____ _____

Mindy Bowman, P.E. Date Signed
Professional Environmental Engineer
Air Permitting Section

MGB:
c: SWDO
C-10021