217/782-2113

CONSTRUCTION PERMIT -- NSPS SOURCE

PERMITTEE

Sullivan Power Plant
Attn: Doug Carnes, Generation Foreman
2 West Harrison Street
Sullivan, Illinois 61951

Application No.: 10070047 I.D. No.: 139030AAE
Applicant's Designation: Date Received: July 22, 2010
Subject: Three New Engine Generators
Date Issued: February 4, 2011
Locations: 517 West Water Street, Sullivan, Moultrie County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of three diesel engine generators (the affected engines), as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.1 Introduction

This permit authorizes construction of three oil fired internal combustion engine generators with a nominal capacity 2,250 KW each (the affected engines) at the Permittee's existing power generating facility located at 517 West Water Street. The affected engines would be Caterpillar Model 3516C engines, model year 2010, with a displacement of less than 10 liters per cylinder. The affected engines would operate to meet electric loads and as needed to assure availability for such purpose. Historically, the Permittee has operated the existing engines at this facility sparingly, primarily for emergency purposes.

1.2 Applicable Federal Emission Standards

a. Each affected engine is subject to the federal New Source Performance Standard (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII. The Permittee must comply with applicable requirements of the NSPS, 40 CFR 60 Subpart IIII, and related requirements of 40 CFR 60, Subpart A, General Provisions, for the affected engines.

b. This permit is issued based on each affected engine being subject to the NSPS requirement for 2007 model year and later non-emergency Stationary Compression Ignition Internal Combustion Engines with a displacement of less than 30 liters per cylinder so that the engine is subject to and shall comply with the applicable emission standards identified in Table 1, 40 CFR 60, Subpart IIII, pursuant to 40 CFR 60.4201(b) and 60.4204(b).

c. The Permittee shall operate and maintain the affected engines, over the entire life of the engines, according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer, pursuant to 40 CFR 60.4211(a) and 4206. The Permittee shall also meet any applicable requirements of 40 CFR Parts 89, 94 and/or 1068 for the affected engines.

d. The Permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510 in the affected engines, pursuant to 40 CFR 60.4207.

e. The Permittee shall demonstrate compliance with the applicable NSPS emission standards for the affected engines in accordance with 40 CFR 60.4211(c).

f. This permit is issued based on the Permittee not being required to conduct initial performance tests under the NSPS because the Permittee is purchasing engines that are certified by the manufacturer according to 40 CFR Part 89 as complying with applicable NSPS emission standards, pursuant to 40 CFR 60.4211(c) and 60.4218.

1.3 State Emission Standards

a. Pursuant to 35 IAC 212.123(a), the opacity of the exhaust from each affected engine shall not exceed 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124 or Conditions 1.3(b) and (c) below.

b. Subject to the following terms and conditions, the Permittee is authorized to operate the affected engines in violation of applicable standard in Condition 1.3(a) (35 IAC 212.123) during startup. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally describing the efforts that will be used "…to minimize startup emissions, duration of individual startups and frequency of startups."

i. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.

ii. The Permittee shall conduct startup of the affected engines in accordance with written procedures prepared by the Permittee that are specifically developed to minimize emissions from startups that include the following measures, at a minimum. These procedures may incorporate the manufacturers' written or automated instructions for startup of the engine. A copy of these procedures shall be kept in the control room or other work area for the operators of the engine:

A. Observation of the operation of an affected engine to confirm proper operation and identify any maintenance or repair activities that should be carried out before the engine is next operated.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 1.9(d) and 1.11(b).

iv. As provided by 35 IAC 201.265, an authorization in a permit for excess emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

c. Subject to the following terms and conditions, the Permittee is authorized to continue operation of the affected engines in violation of the applicable opacity standard in Condition 1.3(a) (35 IAC 212.123) in the event of a malfunction or breakdown of the engine. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

i. This authorization only allows such continued operation as necessary to provide essential service or to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.

ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable reduce load of the affected engine, repair the affected engines, remove the affected engine from service or undertake other action so that excess emissions cease.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 1.9(e) and 1.11(c). For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected engine out of service.

iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

d. Pursuant to 35 IAC 214.301, the emission of sulfur dioxide into the atmosphere from each affected engine shall not exceed 2,000 ppm.

1.4 Non-applicability Provisions

a. This permit is issued based on the affected engines not being subject to the requirements of 35 IAC Part 212, Subpart L, because a process weight rate can not be set, due to the nature of such units, so that these rules cannot reasonably be applied, pursuant to 35 IAC 212.323.

b. This permit is issued based on the affected engines not being subject to emission limitations of the NESHAP for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63 Subpart ZZZZ. This is because the generating station operated by the City of Sullivan is not a major source of hazardous air pollutants (HAPs), so the affected engines would be new stationary engines located at an area source as defined by 40 CFR 63.6590(a)(2). Accordingly, this NESHAP only provides that the engines must comply with the applicable requirements of the NSPS, 40 CFR 60, Subpart IIII. No further requirements apply for the engines under this NESHAP, as provided by 40 CFR 63.6590(c).

c. This permit is issued based on the Permittee not being subject to the monitoring and recordkeeping requirements of 40 CFR 60.4209(b) and 60.4214(c), because the affected engines would not be equipped with diesel particulate filters to comply with the emission standards in 40 CFR 60.4204.

d. This permit is issued based on this project not being a major project subject to the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because the project would not be a major modification for purposes of PSD. In particular, project’s potential emissions of nitrogen oxides (NO_x) would be limited to 39 tons per year.

1.5 Limit for Fuel Sulfur Content under the Federal Acid Rain Program

a. Fuels with a sulfur content greater than 0.05 weight percent on an annual average as determined below, shall not be fired in each affected engine, pursuant to the Permittee's representation that each engine is exempt from the allowance provisions of the Acid Rain Program by meeting the new unit exemption requirement of 40 CFR 72.7(a). The affected engines are subject to the Acid Rain Program provisions of 40 CFR 72.2 through 72.7 and 72.10 through 72.13.

b. The following equation shall be used to address compliance with the above sulfur limit, as applicable for oil-fired units pursuant to 40 CFR 72.7(d)(3):

$$\%S_{annual} = \frac{\sum_{n=1}^{last} \%S_n M_n}{\sum_{n=1}^{last} M_n}$$

Where:

$\%S_{annual}$ = Annual average sulfur content of the fuel burned during the year by the unit, as a percentage by weight;

$\%S_n$ = Sulfur content of the nth sample of the fuel delivered during the year to the unit, as a percentage by weight;

M_n = Mass of the nongaseous fuel in a delivery during the year to the unit of which the nth sample is taken, in lb, as applicable for fuel that is not delivered continuously by pipeline;

M_n may be calculated by multiplying volume (V_n) and density (d_n), i.e. $M_n = V_n \times d_n$, where,

d_n is density of the nth sample of the fuel delivered during the year to the unit, in lb per gallon; and

V_n is volume of the fuel in a delivery during the year to the unit of which the nth sample is taken, in gallons.

n = Each sample taken of the fuel delivered during the year to the unit, taken at least once for each delivery.

c. The Illinois EPA shall be allowed to sample all fuels stored at the facility.

1.6 Operational Limits

a. The only fuel fired in the affected engines shall be distillate fuel oil (No. 1 oil, No. 2 oil and biodiesel).

b. The sulfur content of each individual shipment of fuel received for the affected engines shall not exceed 0.05 percent by weight.

c. The rated electrical output capacity of each affected engine shall not exceed 2,250 kWe.

d. i. The total fuel consumption of the affected engines combined shall not exceed 300,000 gallons per year.

ii. Compliance with these limits and other annual limits in this permit shall be determined from a running total of 12 months of data, unless otherwise specified in a particular provision.

1.7 Emission Limits

a. Emissions from the affected engines shall not exceed the following limits.

Pollutant	Limits		
	g/kW-hour[1]	lbs/hour[2] (each)	tons/year[3] (total)
NO_x	9.2	49.8	39.0
CO	11.4	61.3	58.8
VOM	1.3	7.2	7.1
PM	0.54	2.9	2.6
Individual HAP[4]	---	3.6	3.5

[1] NSPS emission standards for 2007-2010 model year engines, with a maximum engine power greater than 2,237 kW (3000 HP), as required in 40 CFR 60.4201(b) and 60.4204(b).

[2] The hourly limits for NO_x, CO, VOM and PM are based on applicable NSPS standards. Thus, compliance with these limits would ensure or show compliance with the NSPS standards.

[3] The annual limits for CO, VOM and PM are based on the applicable NSPS standards. The annual limit for NO_x is based on manufacturer's emission factor for NO_x, in g/kW-hr, which is lower than the NSPS standard.

[4] Emissions of individual HAP, e.g., formaldehyde, benzene, toluene, and xylene. The limits for individual HAPs are set at 50 percent of the limit for VOM.

b. This permit is issued based on negligible emissions of SO_2 from the affected engines. For this purpose, total emissions of SO_2 shall not exceed 0.4 ton per year.

1.8-1 Opacity Testing

a. The Permittee shall have the opacity of the exhaust from the affected engines during representative operating conditions determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below.

i. Upon written request, as specified by the Illinois EPA, such testing shall be conducted for the engine within 45 calendar days of the request, or on the date the affected engine next operates, or on the date agreed upon by the Illinois EPA, whichever is later.

b. i. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of testing, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the observer(s) and identify any concerns for successful completion of observations, i.e., lack of suitable point for proper observation or inability to conduct observations under specified operating conditions.

ii. The Permittee shall promptly notify the Illinois EPA of any changes in the date or time of testing.

c. The Permittee shall provide a copy of its observer’s readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

d. The Permittee shall submit a written report for these observations within 15 days of the date of observation. This report shall include:

i. Date and time of testing.

ii. Name and employer of qualified observer.

iii. Copy of current certification.

iv. Description of observation conditions.

v. Description of engine operating conditions.

vi. Raw data.

vii. Opacity determinations.

viii. Conclusions.

1.8-2 Emission Testing

a. Within 180 days of a written request from the Illinois EPA, or the date agreed upon by the Illinois EPA, whichever is later, the Permittee shall have testing conducted by an approved independent testing service for the affected engines for emissions of NO_x, CO, VOM (NMHC), PM, and HAPs, as specified in the request. All emission tests for NO_x, CO, VOM, and PM must be conducted in accordance with the requirements in 40 CFR 60.4212.

1.9 Recordkeeping

a. The Permittee shall fulfill applicable recordkeeping requirements of the NSPS for the affected engines.

b. The Permittee shall maintain records of the following items for the affected engines:

i. A file or other record for the engines containing:

A. The model number, model year and serial number of each engine.

B. The manufacturer’s specification for maximum capacity of each engine and a copy of the manufacturer’s certification of compliance with 40 CFR Part 89 or Part 1039, with associated emission rates.

C. Data for the maximum hourly emission rates for NO_x, CO, VOM, PM and individual HAP from the affected engines (lbs/hour), with supporting documentation and calculations.

ii. An operating log, which shall include the following information:

A. Information for each time the engines are operated, with date, time, duration, and purpose (i.e., exercise or standby need).

B. Information for any incident in which the operation of the engines continued during malfunction or breakdown, including: date, time, and duration; a description of the incident; whether emissions exceeded or may have exceeded any applicable standard; a description of the corrective actions taken to reduce emissions and the duration of the incident; and a description of the preventative actions taken.

iii. A maintenance and repair log, listing each activity performed with date.

iv. Records of the fuel usage of the affected engines (gallons/month and gallons/year).

v. Records of total emissions of NO_x, CO, VOM, PM, SO_2 and HAPs from the engines (tons/month and tons/year), with supporting calculations.

vi. Records for opacity observations made in accordance with USEPA Method 9 for the affected engines that it conducts or that are conducted on its behest by individuals who are qualified to make such observations. For each occasion on which such observations are made, these records shall include the identity of the observer, a description of the various observations that were made, the observed opacity, and copies of the raw data sheets for the observations.

c. The Permittee shall maintain the following records related to the sulfur content of the fuel fired in the affected engines:

i. Records for each shipment of fuel oil received, including the amount received, maximum sulfur content, and supplier. The Permittee may utilize data provided by the fuel oil supplier for the sulfur content of each shipment.

ii. Records for the sulfur content of the fuel oil supply to the affected engines on an annual basis, with supporting calculations using the equation in 40 CFR 72.7(d)(3) (Condition 1.5(b)). For this purpose, if all fuel shipments have a sulfur content equal to or less than 0.05% by weight, then the annual average sulfur content may be assumed to be equal to 0.05% by weight, and no calculations are necessary. If any fuel shipment has sulfur content greater than 0.05% by weight, calculations must be completed.

iii. Records for operation of an affected engine with an oil that exceeds of the applicable limit for sulfur content, with date, duration, actual sulfur content of oil, and explanation.

d. The Permittee shall maintain the following records related to Startup:

i. Records of startup procedures for the affected engines, as required by Condition 1.3(b)(ii), accompanied by the Permittee’s estimate of opacity levels during a typical startup, with supporting information.

ii. The following information for each startup of the affected engines:

A. Date and time of startup.

B. Whether startup is “remote”, i.e., initiated by off-site personnel or automated procedures.

C. Whether operating personnel for the engine or air environmental staff are on site during startup, even if startup is remote.

D. A description of startup, if operating problems are identified during the startup.

iii. The following information for the affected engines when above normal opacity has been observed by source personnel as identified in Condition 1.9(d)(ii)(C):

A. Name of observer, position and reason for being at site.

B. Date and duration of above normal opacity, including start time and time normal operation was achieved.

C. If normal operation was not achieved within 15 minutes, an explanation why normal operation could not be achieved in 15 minutes.

D. A detailed description of the startup, including reason for operation and an explanation why established startup procedures could not be performed, if not performed.

E. The nature of opacity following the end of startup or two hours of operation, whichever occurs first, and duration of operation until achievement of normal opacity or shutdown.

F. Whether exceedance of Condition 1.3(a) may have occurred during startup, with explanation, if a qualified observer was on-site.

e. Pursuant to 35 IAC 201.263, the Permittee shall maintain the following records related to malfunction and breakdown of the affected engines:

i. Maintenance and repair log(s) for the affected engines that, at a minimum, address aspects or components of the engine for which malfunction or breakdown has resulted in excess emissions, which shall list the activities performed on such aspects or components, with date, description and reason for the activity.

ii. Records for each incident when operation of the affected engine continued with excess emissions, including malfunction or breakdown as addressed by Condition

1.3(c), that, at a minimum, include the following information:

A. Date, time, duration and description of the incident.

B. The corrective actions used to reduce the quantity of emissions and the duration of the incident.

C. Confirmation of fulfillment of the requirements of Condition 1.11(c), as applicable, including copies of follow-up reports submitted pursuant to Condition 1.11(c)(ii).

D. If opacity exceeded the applicable standard for two or more hours during the incident:

1. A detailed explanation why continued operation of the affected engine was necessary.

2. The preventative measures that have been or will be taken to prevent similar incidents or reduce their frequency and severity, including any repairs to the affected engine and associated equipment and any changes to operating and maintenance procedures.

1.10 Record Retention

All records required by this permit shall be retained on site for a period of at least five years and shall be readily available for inspection and copying by the Illinois EPA upon request. Any record retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

1.11 Notifications and Reporting

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS for the affected engines.

b. The Permittee shall submit semi-annual reports to the Illinois EPA that include the following information for the affected engines during each 6 month period, pursuant to 35 IAC 201.263.

i. A. For the affected engines, a listing of each startup, including date and description, accompanied by a copy of the records pursuant to Condition 1.9(d)(ii)(D) for each startup for which such records were required.

B. If there have been no startups of an affected engine during the semi-annual period, this shall be stated in the report.

ii. A. For the affected engines, a listing of incidents during the semi-annual period in which affected engine continued to operate during malfunction or breakdown with excess opacity, in chronological order, that includes: (1) the date, time, and duration of each incident, and (2) whether a follow-up notice was submitted for the incident pursuant to Condition 1.11(c)(ii), with the date of the notice.

B. The detailed information for each such incident required pursuant to Condition 1.11(d) (as each incident constitutes a deviation) and Condition 1.11(c)(ii). For this purpose, the Permittee need not resubmit information provided in a prior report for an incident, as identified above, but may elect to supplement the prior submittal.

C. The aggregate duration of all incidents during the semi-annual period.

D. If there have been no such incidents during the semi-annual period, this shall be stated in the report.

c. Pursuant to 35 IAC 201.263, the Permittee shall provide the following notifications and reports to the Illinois EPA, Compliance Section and Regional Office, concerning incidents when operation of an affected engine continued with excess emissions, including continued operation during malfunction or breakdown as addressed by Condition 1.3(c). These requirements do not apply to such excess emissions, if any, that occur during startup or shutdown of the affected engine.

i. The Permittee shall immediately notify the Illinois EPA's Regional Office, by telephone (voice, facsimile or electronic) for each incident in which the opacity from an affected engine exceeds or may have exceeded 30 percent for four or more 6-minute averaging periods unless the Permittee has begun the shutdown of an affected engine by such time. (Otherwise, as related to opacity, if opacity during an incident only exceeds or may have exceeded 30 percent for no more than four six 6-minute averaging periods, the Permittee need only report the incident in the semi-annual report, in accordance with Condition 1.11(b).)

ii. Upon conclusion of each incident in which exceedances of the opacity standard is one hour or more in duration, the Permittee shall submit a follow-up report to the Illinois EPA, Compliance Section and Regional Office, within 15 days that includes: a detailed description of the incident and its cause(s); an explanation why continued

operation of an affected engine was necessary; the length of time during which operation continued under such conditions, until repairs were completed or the engine was taken out of service; a description of the measures taken to minimize and correct deficiencies with chronology; and a description of the preventative measures that have been and are being taken.

d. The Permittee shall notify the Illinois EPA of deviations of the affected engines with the permit requirements within 30 days of an occurrence. Reports shall describe the deviation, the probable cause of such deviations, the corrective actions taken, and any preventive measures taken.

e. i. If the affected engines consume more than 230,000 gallons of fuel, total, in a calendar year, the Permittee shall include the following information in its Annual Emission Report for that calendar year:

A. The total amount of fuel that the affected engines consumed in that calendar year.

B. A description of the events or circumstances in the calendar year that led to the amount of operation that caused such fuel consumption, with explanation.

C. A discussion whether similar or higher levels of operation should be expected in the next three years, including the current calendar year.

ii. This requirement will terminate once testing for emission of NO_x and CO is conducted for an affected engine in accordance with Condition 1.8-2.

1.12 Notifications and Reporting Addresses

Two copies of all required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/782-6348

and one copy of all required reports and notifications shall be sent to the Illinois EPA's regional office at the following address, unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Field Office
2009 Mall Street

Collinsville, Illinois 62234

Telephone: 618/346-5120 Fax: 618/346-5155

1.13 Authorization to Operate

The Permittee is allowed to operate the affected engines pursuant to this permit until a revised CAAPP permit is issued addressing the affected engines.

If you have any questions concerning this permit, please contact Manish Patel at 217/782-2113.

Edwin C. Bakowski, P.E. Date Signed: _____
Manager, Permit Section
Division of Air Pollution Control

ECB:MNP:jws

cc: FOS - Region 3, Illinois EPA
CAAPP Permit File - 95080101, Illinois EPA
Lotus Notes