

1.3 Applicability Provisions and Applicable Regulations

- a. The "affected engine" for the purpose of these unit specific conditions is the new engine described in Conditions 1.1 and 1.2.
- b. Pursuant to 40 CFR 60.4230(a)(4), the affected engine is subject to the applicable requirements of the New Source Performance Standards (NSPS) for Spark Ignition Combustion Engines, 40 CFR 60 Subpart JJJJ. Pursuant to the NSPS, Subpart JJJJ, the affected engine and the Permittee shall comply with the applicable requirements of this NSPS, including the applicable emission standards in Table 1 of 40 CFR 60, Subpart JJJJ.

Note: The emissions limits in Condition 1.6 of this permit for the affected engine are more stringent than the applicable emissions standards under the NSPS, 40 CFR 60, Subpart JJJJ.

- c.
 - i. This permit is issued based on, source being a major source of emissions of hazardous air pollutants (HAPs), the affected engine is subject to the applicable requirements of National Emission Standards for Hazardous Air pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63, Subpart ZZZZ.
 - ii. Pursuant to 40 CFR 63.6600(b), the affected engine and the Permittee shall comply with the applicable requirements of this NESHAP, including the applicable CO or formaldehyde emission standards for 4SLB new stationary RICE, in Table 2a of 40 CFR 63 Subpart ZZZZ, at all times, except during startup, shutdown, and malfunction in accordance with 40 CFR 63.6605(a).
- d. The affected engine is subject to 35 IAC 212.123(a), which provides that the emissions of smoke or other particulate matter from the engine shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 201.149, 212.123(b), or 212.124.
- e. The affected engine is subject to 35 IAC 214.301, which provides that the emission of sulfur dioxide into the atmosphere from the engine shall not exceed 2000 ppm.

1.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on this project not being a major modification subject to the PSD rules.
 - i. For emissions of nitrogen oxides (NO_x) this determination is based on contemporaneous and credible decrease in NO_x emissions so that net

increase in NO_x emissions accompanying this project is not significant. Therefore, this project is not a major modification pursuant to PSD. The decrease in NO_x emissions is due to the change in operating status of the Engine 01-AUX from continuous operation to emergency use only. (See Condition 1.5(f) and 1.6(b) and Attachment 1.)

- ii. For pollutants other than NO_x, this is because the new engine will not have significant emissions, as defined under the PSD rules. (See Condition 1.6)
- b. The affected engine is not subject to the requirements of 35 IAC 212.321 or 212.322 because it does not have a process weight rate as defined in 35 IAC 211.5250.
- c. The affected engine is not subject to the requirements of 35 IAC 215.143 because the blowdown emissions associated with engine is not considered to be vapor blowdown pursuant to 35 IAC 215.143.

1.5 Operational and Production Limits and Work Practices

- a.
 - i. The affected engine shall only be fired with natural gas.
 - ii. The rated heat input capacity of the affected engine shall not exceed 53.3 million Btu per hour.
- b. Pursuant to 40 CFR 63.6600(b), the Permittee shall, at all times, operate the affected engine in compliance with the applicable operating limitations specified in Table 2b of 40 CFR 63 Subpart ZZZZ for the new 4SLB stationary RICE controlled with an oxidation catalyst system.
- c. Pursuant to the NSPS, 40 CFR 60.8 and the NESHAP, 40 CFR 63.6605(b), the Permittee shall, maintain and operate the affected engine, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practice for minimizing emissions at all times, including periods of startup, shutdown, and malfunction.
- d. The affected engine shall be equipped, operated, and maintained with an oxidation catalyst to control CO, VOM, and formaldehyde emissions.
- e. The Permittee shall either carry out operational evaluations and inspections for the affected engine accompanied by appropriate maintenance on a regular basis or carry out detailed inspections and evaluations for the engine accompanied by appropriate maintenance on least an annual basis (or at least an equivalent frequency in terms

of actual engine operating hours if the engine is removed from routine service).

- f. Beginning 180 days after the initial startup of the affected engine, existing Engine 01-AUX shall only be operated as Emergency Stationary RICE, as defined in 40 CFR 60.4248 and 40 CFR 63.6675.

1.6 Emission Limitations

- a. i. The emissions of the affected engine shall not exceed the following limits.

Pollutant	Emissions Limit	
	Lbs/hour	Tons/year
NO _x	12.6	55.3
CO	3.1	13.3
PM	0.5	2.3
VOM	4.2	18.3
HAPs (total)	1.6	7.1

- ii. This permit is issued based on emissions of SO₂ from the affected engine being negligible, as it is being fired with pipeline quality natural gas. For this purpose emissions shall not exceed 0.05 lb/hour and 0.2 ton/year.
- b. Beginning 180 days after the initial startup of the affected engine, the emissions of the existing Engine 01-AUX shall not exceed 15.1 pounds/hour and 3.8 tons/year.
- c. The above limits are based on information provided in the application, including maximum heat input, manufacturers or standard AP-42 emission factors, and continuous operation (Engine 16) and restricted operation (Engine 1). Compliance with annual limits shall be determined from a running total of 12 months of data.

1.7-1 Testing Requirements

The Permittee shall have emissions tests conducted for the affected engine as follows.

- a. Pursuant to the applicable requirements of the NSPS, 40 CFR 60 Subpart JJJJ.
- b. i. Pursuant to 40 CFR 63.6610(a), Within 180 days of initial startup of the affected engine, the Permittee shall conduct initial performance test for the engine in accordance with applicable provisions in 40 CFR 63.7(e) and Table 4 of 40 CFR 63 Subpart ZZZZ.

- ii. The Permittee shall conduct subsequent performance test for the affected engine, in accordance with the applicable testing requirements of the NESHAP, 40 CFR 63 Subpart ZZZZ.
- c. Within 180 days after operating the affected engine at the greatest load at which they will normally be operated but not later than 300 days after their initial startup, the Permittee shall have tests conducted for Engine 16 by an approved testing service as follows.
 - i. Emissions of NO_x, CO, and VOM shall be measured at maximum load. Emissions of NO_x and CO shall be measured at the minimum load and intermediate load level. The minimum load and intermediate load testing may be achieved through 20 minute test runs.
- d. USEPA methods and procedures shall be used for testing, including the following methods, unless other USEPA supported methods are approved by the Illinois EPA as part of the its review of the test plan:

Location of Sample Points	USEPA Method 1 or 19
Gas Flow and Velocity	USEPA Method 2 or 19
Flue Gas Weight	USEPA Method 3 or 3A or 19
Moisture	USEPA Method 4 or 19
Nitrogen Oxides	USEPA Method 7E
Carbon Monoxide	USEPA Method 10
Volatile Organic Material	USEPA Methods 18 and 25A
- e. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for each engine will be tracked and recorded.
 - iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations.
 - iv. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.

- f. The Illinois EPA shall be notified prior to these tests to enable it to observe these tests. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- g. Copies of the Final Reports for these tests shall be forwarded to the Illinois EPA within 60 days after the test results are compiled and finalized. The Final Report from testing shall contain a minimum:
 - i. A summary of test results;
 - ii. General information;
 - iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;
 - iv. Detailed description of test conditions, including:
 - A. Fuel consumption (standard ft³); or; firing rate (million Btu/hour); and
 - B. Engine output rate (hp).
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.
 - vi. Opacity observed during the period of testing.

1.7-2 Opacity Observation Requirements

- a. The Permittee shall have the opacity of the emissions from the affected engine during representative weather and operating conditions determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below.
 - i. Following the initial emission measurements, periodic observations of opacity shall be conducted at least every year for the affected engine, if any visible emissions, as determined by USEPA Method 22, are normally present when the engine is operating.

- ii. Upon written request by the Illinois EPA, observations of the opacity of the affected engines shall be conducted within 60 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.
- b. The duration of opacity observations shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.
- c. The Permittee shall submit a written report for this testing within 15 days of the date of testing. 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 condition, including recent weather.
 - v. Description of the operating conditions of the affected engine.
 - vi. Raw data.
 - vii. Opacity determinations.
 - viii. Conclusions.

1.8 Monitoring and Instrumentation Requirements

- a. For the affected engine, the Permittee shall comply with the applicable monitoring requirements of the NESHAP, 40 CFR 63 Subpart ZZZZ.
- b. For the affected engine, in addition to retaining the records of monitored operating parameter(s) pursuant to the monitoring requirements of the NESHAP, 40 CFR 63 subpart ZZZZ, the Permittee shall maintain the following records for required instrumentation:
 - i. A file for each instrument that contains: 1) The manufacturer's specifications for the unit; and 2) The written instructions provided by manufacturer for operation, calibration, maintenance and repair of the unit.
 - ii. A log of other records for the instruments, which at a minimum identifies any outage of the instrument, with explanation, and calibration, maintenance and

repair activities performed on the system, with date and description.

1.9 Recordkeeping Requirements

- a. The Permittee shall comply with the applicable recordkeeping requirements of the NSPS, 40 CFR 60 Subpart JJJJ, for the affected engine.
- b. The Permittee shall comply with the applicable recordkeeping requirements of the NESHAP, 40 CFR 63 Subpart ZZZZ, for the affected engine and Engine 01-AUX.
- c. The Permittee shall maintain following operating records for the affected engine and Engine 01-AUX:
 - i. Operating hours (hours/month and hours/year).
 - ii. Natural gas fuel usage (scf/month and scf/year).
- d. The Permittee shall maintain records of the following for the incident when the affected engine operated without the control measures:
 - i. The date of the incident.
 - ii. A description of the incident, including the control measures that were not present or implemented; the control measures that were present, if any; and the magnitude of the NO_x, CO, VOM and HAP emissions during the incident.
 - iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.
 - iv. The length of time after the incident was identified that the affected engine continued to operate before control measures were in place or the engine was shutdown (to resume operation only after control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.
 - v. The estimated total duration of the incident, i.e., the total length of time that the affected engine ran without control measures.
 - vi. A discussion of the probable cause of the incident and any preventative measures taken.
 - vii. A discussion whether an applicable limitation in Conditions 1.4 or 1.6 may have been violated during

the incident, with an estimate of the amount of any additional or excess emissions (pounds) from the incident, with supporting explanation.

Note: Records that are maintained as a part of the other recordkeeping requirements, e.g., NESHAP records, NSPS records, operational monitoring, etc., would satisfy the requirement of this condition and a separate record of such information need not be maintained.

- e. The Permittee shall maintain the following emission records for the affected engine and Engine 01-AUX:
 - i. Manufacturer's data for the engine including emissions guarantees, horsepower or rated heat input capacity (mmBtu/hour), and operating and maintenance procedures suggested by the manufacturer.
 - ii. A file, which shall be kept current that contains hourly emission rate used by the Permittee to determine emissions of the engine, for each pollutant, with supporting documentation.
 - iii. Records of the monthly and annual NO_x, CO, PM, and VOM emissions (tons/month and tons/year) with supporting calculations.
- f. The Permittee shall maintain the records of the following items related to startup of the affected engine:
 - i. Records of the source's established startup procedures for the affected engine
 - ii. Records for each startup of the affected engine when established startup procedures were not followed with explanation for why procedures were not followed.
- g. The Permittee shall maintain an inspection and maintenance log or other records for the affected engine and associated emission control measures that, at a minimum, document performance of the inspections required by Condition 1.5(d) and other activities performed to maintain proper operation as related to control of emissions.
- h. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for the affected engine that he conducts or that are conducted on its behalf by individuals who are qualified to make such observations. For the occasion on which such measurements are made, these records shall include the formal report for the measurements if conducted pursuant to Condition 1.7-2, or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of

the affected engine, the observed opacity, and copies of the raw data sheets for the measurements.

1.10 Reporting Requirements

- a. The Permittee shall comply with the applicable notification and reporting requirements of the NSPS, 40 CFR 60 Subpart JJJJ, for the affected engine.
- b. The Permittee shall comply with the applicable notification and reporting requirements of the NESHAP, 40 CFR 63 Subpart ZZZZ, for the affected engine and Engine 01-AUX.
- c. If there is a deviation of the requirements of this permit, not otherwise addressed pursuant to the reporting requirements of the NSPS or the NESHAP, the Permittee shall submit a report to the Illinois EPA within 30 days after deviation. The report shall include a description of the deviation, the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of steps taken to reduce emissions and future occurrences.
- d. Two copies of all reports, notifications, etc required by this permit 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 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 Office
9511 West Harrison
Des Plaines, Illinois 60016

Telephone: 847/294-4000 Facsimile: 847/294-4018

1.11 Additional Provisions for Maintenance, Repair, and Replacement

- a. This permit authorizes installation of manufacturer supplied replacement engine or engine components for the affected engine and Engine 01-AUX, that takes place either as part of scheduled maintenance of the engine or in the event of malfunction or unscheduled outage and subsequent repairs. This authorization does not address activities for which a construction permit is not required, such as routine preventive maintenance, minor replacement of engine

components or assemblies, or activities that do not involve, either directly or indirectly, emission-related components or activities that do not involve, either directly or indirectly, emission-related components or assemblies of the engine.

- b. This authorization is limited to activities that can be accommodated by the original installation of the affected engine and that are performed in conjunction with an ongoing program of maintenance, repair, and replacement, so as to not constitute a modification with respect to PSD. This authorization does not extend to installation of a replacement engine that is a different make and model than the original engine or to activities that are intended to, or would have the result of, increasing the design capacity of an engine.
- c. This authorization also does not excuse the Permittee from any new regulatory requirements that are adopted and applicable to the engine.
- d. The Permittee shall expeditiously have performance testing conducted on an engine following replacement of engine or engine components, if requested by the Illinois EPA.
- e.
 - i. The Permittee shall maintain following records at the source for the replacement activities authorized by this permit:
 - A. A file containing the paperwork for original and replacement engine or engine components, including documentation for engine model numbers and serial numbers and copies of the specifications for the engine.
 - B. Details of activities performed pursuant to this permit including the date that the engine is removed from the service and the date the engine is returned to service.
 - ii. The records required by Condition 1.11(e)(i) shall be retained for at least five years after the date that the engine is permanently removed from the service.
- f. The Permittee shall notify the Illinois EPA prior to carrying out activities pursuant to this Condition 1.11. This notification shall be submitted at least 15 days in advance or as soon as it is practicable to do so, e.g., in the event of engine failure. This notification shall include:
 - i. A description of the activities that are to be performed and the expected schedule for the activities.

- ii. A confirmation that the activities fall within the authorization provided by this permit, the replacement is or will be in good operating conditions, and the outage of a engine will not prevent or interfere with compliance with applicable requirements for control of emissions, with supporting information.
- g. The authorization provided by Condition 1.11 for the affected engine will terminate when the engine is permanently removed from service or 30 days after notification from the Illinois EPA that this authorization is being terminated, whichever occurs first. As related to the replacement activities authorized by this permit, this condition supersedes Standard Condition 1.

1.12 Authorization for Operation

- a.
 - i. The Permittee may operate the affected engine (Engine 16) pursuant to this construction permit, provided that the emission testing and opacity observation required under Condition 1.7 completed in a timely manner, until the CAAPP permit for the source is revised or reissued to address this engine.
 - ii. The Permittee may also operate the existing Engine 01-AUX as an Emergency Stationary RICE pursuant to this construction permit until the CAAPP permit for the source is revised or reissued to address this change of status for this engine.
 - iii. As part of the CAAPP modification application, the Permittee shall include detailed information on the potential emissions of CO from the affected engine in the absence of the oxidation catalyst control system to determine whether this system must be operated under a Compliance Assurance Monitoring (CAM) Plan as related to emissions of CO and the limits on CO in Condition 1.6(a).

1.13 Effect Of This Permit

This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.

If you have any questions on this, please call Kunj Patel at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:CPR:KMP:jws

cc: Region 1

Attachment 1

Evaluation of Net Change in NO_x Emissions (Tons/year)

Table 1 - Future permitted NO_x emissions from Engine 16 and Engine 01-AUX with operation restricted to emergency use:

Unit	Emissions (Tons/year)
Engine 16	55.4
Engine 01-AUX	3.8
Total	59.2

Table 2 - Past actual NO_x emissions from Engine 01-AUX:

Unit	Emissions (Tons/year)
Engine 01-AUX	53.1 ¹

¹ Actual emissions are based on the 24-consecutive months within the 10-year period prior to commencing construction of Engine 16. The baseline actual emissions are the average annual actual emissions for year 2001-2002. (Refer to Section 3.2.2.4 on Page 3-4 of the application)

Table 3 - Net Change in NO_x Emissions:

Time Period	Emissions (tons/year)
Future (Table 1)	59.2
Past (Table 2)	53.1
Change	6.1
PSD Significant Threshold	40