



	<u>g/kW-Hour</u>	<u>lb/Hp-Hour</u>
Carbon Monoxide (CO)	11.4	8.5
Hydrocarbons (HC)	1.3	1.0
Nitrogen Oxides (NO <sub>x</sub> )	9.2	6.9
Particulate Matter(PM)	0.54	0.4

- c. Pursuant to 40 CFR 60.4205(b), owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.
  - d. Pursuant to 40 CFR 60.4205(c), owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to 40 CFR 60 Subpart IIII, for all pollutants.
  - e. Pursuant to 40 CFR 60.4206, owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.
  - f. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
3. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 Ill. Adm. Code 212.122, except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
  - 4a. Pursuant to 35 Ill. Adm. Code 214.122(b)(1), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hr), burning liquid fuel exclusively to exceed 1.55 kg of sulfur dioxide per MW-hr of actual heat input when residual fuel oil is burned (0.8 lbs/mmBtu).
  - b. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm.

- c. Pursuant to 35 Ill. Adm. Code 214.304, the emissions from the burning of fuel at process emission sources located in the Chicago or St. Louis (Illinois) major metropolitan areas shall comply with applicable Subparts B through F.
- 5a. Pursuant to 40 CFR 60.4207(a), beginning October 1, 2007, owners and operators of stationary CI ICE subject to 40 CFR 60 Subpart IIII that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).
- b. Pursuant to 40 CFR 60.4207(b), beginning October 1, 2010, owners and operators of stationary CI ICE subject to 40 CFR 60 Subpart IIII with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.
- c. Pursuant to 40 CFR 80.510(a), beginning June 1, 2007. Except as otherwise specifically provided in 40 CFR 80 Subpart I, all NRLM diesel fuel is subject to the following per-gallon standards:
  - i. Sulfur content. 500 parts per million (ppm) maximum.
  - ii. Cetane index or aromatic content, as follows:
    - A. A minimum cetane index of 40; or
    - B. A maximum aromatic content of 35 volume percent.
- d. Pursuant to 40 CFR 80.510(b), beginning June 1, 2010. Except as otherwise specifically provided in 40 CFR 80 Subpart I, all NR and LM diesel fuel is subject to the following per-gallon standards:
  - i. Sulfur content 15 ppm maximum for NR diesel fuel.
  - ii. Cetane index or aromatic content, as follows:
    - A. A minimum cetane index of 40; or
    - B. A maximum aromatic content of 35 volume percent.
- 6a. Pursuant to 40 CFR 60.4211(a), if you are an owner or operator and must comply with the emission standards specified in 40 CFR 60 Subpart IIII, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
- b. Pursuant to 40 CFR 60.4211(c), if you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in 40 CFR 60.4204(b) or 40 CFR 60.4205(b), or if you are an owner or operator of a CI fire

pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to 40 CFR 60 Subpart IIII and must comply with the emission standards specified in 40 CFR 60.4205(c), you must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4204(b), or 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

- 7a. The diesel generator sets shall only be operated with fuel oil grades No. 1 and 2 (i.e., diesel) as the fuel. The use of any other fuel in the diesel generator sets requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- b. The diesel generator sets shall only be operated with distillate fuel oil, grades No. 1 and 2 (i.e., diesel) and as the fuel.
  - i. Distillate fuel oil (Grade No. 1 and 2) with a sulfur content greater than the larger of the following two values:
    - A. 0.28 weight percent, or
    - B. The Wt percent given by the formula: Maximum Wt percent sulfur = (0.000015) x (Gross heating value of oil, Btu/lb).
  - ii. Organic liquid by-products or waste materials shall not be used in the diesel generator sets without written approval from the Illinois EPA.
  - iii. The Illinois EPA shall be allowed to sample fuel stored at the source associated with the diesel generator set.
- 8a. Emissions and operation of the thirty-two (32) diesel generator sets will not exceed the following:
  - i. Total diesel fuel burned shall not exceed 96,548.8 gallons/month and 965,488 gallons/year.
  - ii. Emissions from the diesel generator sets shall not exceed:

<u>Pollutant</u>	<u>Emission Factor</u> (lb/HP-hr)	<u>Emissions</u>	
		<u>Tons/Month</u>	<u>Tons/Year</u>
Nitrogen Oxides (NO <sub>x</sub> )	0.01520	9.36	93.6
Carbon Monoxide (CO)	0.0187	5.07	50.7
Volatile Organic Material (VOM)	0.0022	0.50	5.00
Particulate Matter (PM)	0.00088	0.94	9.40
Sulfur Dioxide (SO <sub>2</sub> )	0.0004045	0.50	5.00

The above limits are based on the maximum fuel usage and emission factors derived from the relevant limits from 40 CFR 60.4205(b). The emission factor for sulfur dioxide was calculated from standard USEPA

emission factors (Table 3.4-1, AP-42, Fifth Edition, Volume I, Supplement B, October 1996) with a fuel sulfur content (0.05%).

- b. Emissions and operation of the eight (8) natural gas-fired boilers shall not exceed the following:
  - i. Total Maximum firing rate: 16 mmBtu/hr
  - ii. Total Runtime (combined): 26,010 hours/year.
  - iii. Emissions from all eight (8) natural gas-fired boilers (combined):

<u>Pollutant</u>	<u>Emission Factor (lb/mmscf)</u>	<u>Emissions (lb/hr)</u>	<u>Emissions (Tons/Year)</u>
Nitrogen Oxides (NO <sub>x</sub> )	100	1.60	2.55
Carbon Monoxide (CO)	84	1.34	2.14
Volatile Organic Material (VOM)	5.5	0.09	0.14
Particulate Matter (PM)	7.6	0.12	0.19
Sulfur Dioxide (SO <sub>2</sub> )	0.6	0.01	0.02

These limits are based on maximum runtime for all eight boilers, the maximum combined firing rate, and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Emissions and operation of the fire pump engine shall not exceed the following:

<u>Pollutant</u>	<u>Emission Factor (lb/HP-hr)</u>	<u>Emissions (lb/hr)</u>	<u>Emissions (Tons/Year)</u>
Nitrogen Oxides (NO <sub>x</sub> )	0.01632	2.43	0.61
Carbon Monoxide (CO)	0.00154	0.23	0.06
Volatile Organic Material (VOM)	0.000859	0.13	0.03
Particulate Matter (PM)	0.00132	0.20	0.05
Sulfur Dioxide (SO <sub>2</sub> )	0.0004045	0.06	0.02

The above limits are based on emission factors are derived manufacturer's data and a power rating of 149 HP for the fire pump engine and a maximum of 500 hour/year of operation. The emission factor for sulfur dioxide was calculated from standard USEPA emission factors (Table 3.4-1, AP-42, Fifth Edition, Volume I, Supplement B, October 1996) with a fuel sulfur content (0.05%).

- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 9. This permit is issued based on the potential to emit (PTE) for hazardous air pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act being less than 10 tons/year of any single HAP and 25

tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements of Section 112(g) of the Clean Air Act.

- 10a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
    - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
    - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
  - b. Testing required by Condition 11 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 11a. Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301.
  - b. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that for roadways and parking areas the number of

readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.

- c. Pursuant to 35 Ill. Adm. Code 212.110(a), measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E.
  - d. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
  - e. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
- 12. The Permittee shall perform all applicable monitoring for the diesel generator sets plant as specified in 40 CFR 60.13.
  - 13. The Permittee shall retain all applicable records for the diesel generator sets as specified by 40 CFR 60.7.
  - 14. Pursuant to 40 CFR 60.4214(b), if the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to 40 CFR 60 Subpart IIII, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.
  - 15. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
  - 16a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
    - i. Diesel generator sets runtime (hours/month, hours/year);

- ii. Certification from the fuel supplier of weight percent sulfur content of each fuel shipment received;
  - iii. Amount of fuel used (gallons/month, gallons/year);
  - iv. An inspection, maintenance and repair log of the generators listing each activity performed with date; and
  - v. Monthly and annual emissions of NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, and VOM with supporting calculations (tons/month, tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records 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 or USEPA request for records during the course of a source inspection.
17. If there is an exceedance of or deviation from the requirements of this permit the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance/deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
18. The Permittee shall submit all applicable reports for the diesel generators, as specified in 40 CFR 60.7 and 60.19.
19. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
20. Two (2) copies of 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

and one (1) 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  
9511 West Harrison  
Des Plaines, Illinois 60016

It should be noted that during the analysis of this permit application, it was determined that your facility has the potential to emit more than 100 tons per year of NO<sub>x</sub> and will be classified as a major source under the Clean Air Act Permit Program (CAAPP). To avoid the CAAPP permitting requirements, you may want to consider immediately applying for a Federally Enforceable State Operating Permit (FESOP).

A FESOP is an operating permit containing federally enforceable limits in the form of permit conditions which effectively restrict the potential emissions of a source to below major source thresholds, thereby excluding the source from the CAAPP. The necessary application forms are available on the Illinois EPA's website at <http://www.epa.state.il.us/air/caapp/permit-forms.html>.

If you have any questions on this permit, please contact Jocelyn Stakely at 217/782-2113.

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

ECB:JRS

cc: Region 1