

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT  
NSPS SOURCE - RENEWAL

PERMITTEE

Nalco Company  
Attn: Ronald A. Tarlini  
Facility Manager  
Naperville, Illinois 60563-1198

Application No.: 96030066

I.D. No.: 043065ABY

Applicant's Designation:

Date Received: August 21, 2007

Subject: Boilers, Generators

Date Issued:

Expiration Date:

Location: 1601 Diehl Road, Naperville, DuPage County

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of three (3) 39.9 mmBtu/hr natural gas/distillate fuel oil-fired boilers and one (1) 53 mmBtu/hr natural gas-fired gas turbine with a 22.436 mmBtu/hr duct burner pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/yr for Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>x</sub>), and Sulfur Dioxide (SO<sub>2</sub>)). As a result, the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. The gas turbine with duct burner is subject to a New Source Performance Standard (NSPS) for stationary gas turbines, 40 CFR 60, Subpart A and GG. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
- b. 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.

c. Pursuant to 40 CFR 60.332(a)(2), on and after the date on which the performance test required by 40 CFR 60.8 is completed, every owner or operator subject to the provisions of 40 CFR 60 Subpart GG as specified in 40 CFR 60.332(b), (c), and (d) shall comply with one of the following, except as provided in 40 CFR 60.332(e), (f), (g), (h), (i), (j), (k), and (l).

i. No owner or operator subject to the provisions of 40 CFR 60 Subpart GG shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0150 \frac{(14.4)}{Y} + F$$

where:

STD = allowable ISO corrected (if required as given in 40 CFR 60.335(b)(1)) NO<sub>x</sub> emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NO<sub>x</sub> emission allowance for fuel-bound nitrogen as defined in 40 CFR 60.332(a)(4).

ii. The use of F in 40 CFR 60.332(a)(1) and (2) is optional. That is, the owner or operator may choose to apply a NO<sub>x</sub> allowance for fuel-bound nitrogen and determine the appropriate F-value in accordance with 40 CFR 60.332(a)(4) or may accept an F-value of zero.

iii. If the owner or operator elects to apply a NO<sub>x</sub> emission allowance for fuel-bound nitrogen, F shall be defined according to the nitrogen content of the fuel during the most recent performance test required under 40 CFR 60.8 as follows:

Fuel-bound nitrogen (percent by weight)	F (NO <sub>x</sub> percent by volume)
N ≤ 0.015	0
0.015 < N ≤ 0.1	0.04(N)
0.1 < N ≤ 0.25	0.004+0.0067(N-0.1)
N > 0.25	0.005

Where:

N = the nitrogen content of the fuel (percent by weight).

or:

Manufacturers may develop and submit to EPA custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the Illinois EPA or USEPA before the initial performance test required by 40 CFR 60.8. Notices of approval of custom fuel-bound nitrogen allowances will be published in the Federal Register.

- d. Pursuant to 40 CFR 60.332(c), stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired, shall comply with the provisions of 40 CFR 60.332(a)(2).
  - e. Pursuant to 40 CFR 60.332(d), stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 megawatts or less except as provided in 40 CFR 60.332(b) shall comply with 40 CFR 60.332(a)(2).
  - f. Pursuant to 40 CFR 60.333, on and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of 40 CFR 60 Subpart GG shall comply with one or the other of the following conditions:
    - i. No owner or operator subject to the provisions of 40 CFR 60 Subpart GG shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.
    - ii. No owner or operator subject to the provisions of 40 CFR 60 Subpart GG shall burn in any stationary gas turbine any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).
- 3a. 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 35 Ill. Adm. Code 212.122.
- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further

that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

- c. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hr of actual heat input from any fuel combustion emission unit using liquid fuel exclusively (0.10 lbs/mmBtu).
- 4a. Pursuant to 35 Ill. Adm. Code 214,122(b)(2), 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 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 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 source to exceed 2000 ppm.
- 5. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air.
- 6a. The turbine and duct burner shall only be operated with natural gas as the fuel. The use of any other fuel in the turbine or the duct burner 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 three boilers shall only be operated with natural gas and distillate fuel oil as the fuels. The use of any other fuel in the three boilers 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.
- c. The Permittee shall not keep, store or use distillate fuel oil (Grades No. 1 and 2) at this source with a sulfur content greater than the larger of the following two values:
  - i. 0.28 weight percent, or
  - ii. The wt. percent given by the formula: Maximum wt. percent sulfur =  $(0.00015) \times (\text{Gross heating value of oil, Btu/lb})$ .
- d. Organic liquid by-products or waste materials shall not be used in any emission unit at this source without written approval from the Illinois EPA.

e. The Illinois EPA shall be allowed to sample all fuels stored at the above location.

7a. Operation and emissions of the three boilers in total shall not exceed the following limits:

i. Natural Gas Usage: 45 mmscf/month and 400 mmscf/year

<u>Pollutant</u>	<u>Emission Factor (lbs/mmscf)</u>	<u>Emissions (lbs/month)</u>	<u>Emissions (Tons/Yr)</u>
Carbon Monoxide (CO)	84	3,780	16.80
Nitrogen Oxides (NO <sub>x</sub> )	100	4,500	20.00
Particulate Matter (PM)	7.6	342	1.52
Sulfur Dioxide (SO <sub>2</sub> )	0.6	27	0.12
Volatile Organic Material (VOM)	5.5	247.5	1.10

These limits are based on the maximum fuel usage noted above, and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

ii. Fuel Oil Usage: 20,834 gallons/month and 250,000 gallons/year

<u>Pollutant</u>	<u>Emission Factor (lbs/1000 Gal)</u>	<u>Emissions (lbs/month)</u>	<u>Emissions (Tons/Yr)</u>
Carbon Monoxide (CO)	5.0	104.17	0.63
Nitrogen Oxides (NO <sub>x</sub> )	20.0	416.68	2.50
Particulate Matter (PM)	2.0	41.68	0.25
Sulfur Dioxide (SO <sub>2</sub> )	39.76	828.36	4.97
Volatile Organic Material (VOM)	0.2	4.17	0.03

These limits are based on the maximum fuel usage noted above, a maximum sulfur content of 0.28 weight percent, and standard emission factors (Tables 1.3-1 and 1.3-3, AP-42, Fifth Edition, Volume I, Supplement E, September 1998).

b. Operation and emissions of the turbine with duct burner shall not exceed the following limits:

i. Turbine Natural Gas Usage: 37.9 mmscf/month and 420 mmscf/year

<u>Pollutant</u>	<u>Emission Factor (lbs/mmscf)</u>	<u>Emissions (lbs/month)</u>	<u>Emissions (Tons/Yr)</u>
Carbon Monoxide (CO)	82.0	3,107.8	17.22

Nitrogen Oxides (NO <sub>x</sub> )	320.0	12,128.0	67.20
Particulate Matter (PM)	6.6	250.1	1.39
Sulfur Dioxide (SO <sub>2</sub> )	3.4	128.9	0.71
Volatile Organic Material (VOM)	2.1	79.6	0.44

These limits are based on the maximum fuel usage noted above, a heat content of 1,000 Btu/scf for natural gas, and standard emission factors (Tables 3.1-1 and 3.1-2a, AP 42, Fifth Edition, Volume I, Supplement F, April 2000).

- ii. Duct Burner Natural Gas Usage: 0.8 mmscf/month and 8 mmscf/year

<u>Pollutant</u>	<u>Emission Factor (lbs/mmscf)</u>	<u>Emissions (lbs/month)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84	67.2	0.34
Nitrogen Oxides (NO <sub>x</sub> )	100	80.0	0.40
Particulate Matter (PM)	7.6	6.1	0.03
Sulfur Dioxide (SO <sub>2</sub> )	0.6	0.5	0.01
Volatile Organic Material (VOM)	5.5	4.4	0.02

These limits are based on the maximum fuel usage noted above, and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Compliance with the annual limits of this permit 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).
- 8. This permit is issued based on the Potential to Emit (PTE) for Hazardous Air Pollutants (HAP) 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 to obtain a Clean Air Act Permit Program (CAAPP) Permit.
- 9a. Pursuant to 40 CFR 60.8(a), at such other times as may be required by the Illinois EPA or USEPA under section 114 of the Clean Air Act, the owner or operator of such facility shall conduct performance (s) and furnish the Illinois EPA or USEPA a written report of the results of such performance test(s).
- b. Pursuant to 40 CFR 60.8(b), performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart of 40 CFR Part 60 unless the Illinois EPA or USEPA:

- i. Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology;
  - ii. Approves the use of an equivalent method;
  - iii. Approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance;
  - iv. Waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Illinois EPA's or USEPA's satisfaction that the affected facility is in compliance with the standard; or
  - v. Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Illinois EPA's or USEPA's authority to require testing under section 114 of the Clean Air Act.
- c. Pursuant to 40 CFR 60.8(c), performance tests shall be conducted under such conditions as the Illinois EPA or USEPA shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Illinois EPA or USEPA such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- d. Pursuant to 40 CFR 60.8(d), the owner or operator of an affected facility shall provide the Illinois EPA or USEPA at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Illinois EPA or USEPA the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Illinois EPA or USEPA as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Illinois EPA or USEPA by mutual agreement.
- e. Pursuant to 40 CFR 60.8(e), the owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:
- i. Sampling ports adequate for test methods applicable to such facility. This includes:

- A. Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and
  - B. Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
- ii. Safe sampling platform(s).
  - iii. Safe access to sampling platform(s).
  - iv. Utilities for sampling and testing equipment.
- f. Pursuant to 40 CFR 60.8(f), unless otherwise specified in the applicable subpart of 40 CFR Part 60, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard under 40 CFR Part 60. For the purpose of determining compliance with an applicable standard under 40 CFR Part 60, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Illinois EPA's or USEPA's approval, be determined using the arithmetic mean of the results of the two other runs.
- 10a. Pursuant to 40 CFR 60.335(a), the owner or operator shall conduct the performance tests required in 40 CFR 60.8, using either
- i. EPA Method 20,
  - ii. ASTM D6522-00, or
  - iii. EPA Method 7E and either EPA Method 3 or 3A in appendix A to 40 CFR Part 60, to determine NO<sub>x</sub> and diluent concentration.
  - iv. Sampling traverse points are to be selected following Method 20 or Method 1, (non-particulate procedures) and sampled for equal time intervals. The sampling shall be performed with a traversing single-hole probe or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

- v. Notwithstanding 40 CFR 60.335(a)(4), the owner or operator may test at few points than are specified in Method 1 or Method 20 if the following conditions are met:
    - A. You may perform a stratification test for NO<sub>x</sub> and diluent pursuant to the procedures specified in section 6.5.6.1(a) through (e) appendix A to 40 CFR Part 75.
    - B. Once the stratification sampling is completed, the owner or operator may use the following alternative sample point selection criteria for the performance test:
      - I. If each of the individual traverse point NO<sub>x</sub> concentrations, normalized to 15 percent O<sub>2</sub>, is within ±10 percent of the mean normalized concentration for all traverse points, then you may use 3 points (located either 16.7, 50.0, and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The 3 points shall be located along the measurement line that exhibited the highest average normalized NO<sub>x</sub> concentration during the stratification test; or
      - II. If each of the individual traverse point NO<sub>x</sub> concentrations, normalized to 15 percent O<sub>2</sub>, is within ±5 percent of the mean normalized concentration for all traverse points, then you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid.
  - vi. Other acceptable alternative reference methods and procedures are given in 40 CFR 60.335(c).
- b. Pursuant to 40 CFR 60.335(b), the owner or operator shall determine compliance with the applicable nitrogen oxides emission limitation in 40 CFR 60.332 and shall meet the performance test requirements of 40 CFR 60.8 as follows:
- i. For each run of the performance test, the mean nitrogen oxides emission concentration (NO<sub>xo</sub>) corrected to 15 percent O<sub>2</sub> shall be corrected to ISO standard conditions using the following equation. Notwithstanding this requirement, use of the ISO correction equation is optional for: Lean premix stationary combustion turbines; units used in association with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on emission control devices:

$$NO_x = (NO_{xo}) (P_r/P_o)^{0.5} e^{19 (H_o - 0.00633)} (288^\circ K/T_a)^{1.53}$$

Where:

$NO_x$  = emission concentration of  $NO_x$  at 15 percent  $O_2$  and ISO standard ambient conditions, ppm by volume, dry basis,

$NO_{xo}$  = mean observed  $NO_x$  concentration, ppm by volume, dry basis, at 15 percent  $O_2$ ,

$P_r$  = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg,

$P_o$  = observed combustor inlet absolute pressure at test, mm Hg,

$H_o$  = observed humidity of ambient air, g  $H_2O$ /g air,

$e$  = transcendental constant, 2.718, and

$T_a$  = ambient temperature, °K.

- ii. The 3-run performance test required by 40 CFR 60.8 must be performed within  $\pm 5$  percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, or at the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Notwithstanding these requirements, performance testing is not required for any emergency fuel (as defined in 40 CFR 60.331).
- iii. For a combined cycle turbine system with supplemental heat (duct burner), the owner or operator may elect to measure the turbine  $NO_x$  emissions after the duct burner rather than directly after the turbine. If the owner or operator elects to use this alternative sampling location, the applicable  $NO_x$  emission limit in 40 CFR 60.332 for the combustion turbine must still be met.
- iv. If the owner operator elects to claim an emission allowance for fuel bound nitrogen as described in 40 CFR 60.332, then concurrently with each reference method run, a representative sample of the fuel used shall be collected and analyzed, following the applicable procedures described in 40 CFR 60.335(b)(9). These data shall be used to determine the maximum fuel nitrogen content for which the established water (or steam) to fuel ratio will be valid.
- v. If the owner or operator elects to install a CEMS, the performance evaluation of the CEMS may either be conducted

separately (as described in 40 CFR 60.335(b)(7)) or as part of the initial performance test of the affected unit.

- vi. If the owner or operator elects to install and certify a NO<sub>x</sub> CEMS under 40 CFR 60.334(e), then the initial performance test required under 40 CFR 60.8 may be done in the following alternative manner:
  - A. Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load.
  - B. Use the test data both to demonstrate compliance with the applicable NO<sub>x</sub> emission limit under 40 CFR 60.332 and to provide the required reference method data for the RATA of the CEMS described under 40 CFR 60.334(b).
  - C. The requirement to test at three additional load levels is waived.
- vii. If the owner or operator elects under 40 CFR 60.334(f) to monitor combustion parameters or parameters indicative of proper operation of NO<sub>x</sub> emission controls, the appropriate parameters shall be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in 40 CFR 60.334(g).
- viii. To determine the fuel bound nitrogen content of fuel being fired (if an emission allowance is claimed for fuel bound nitrogen), the owner or operator may use equipment and procedures meeting the requirements of, for gaseous fuels, shall use analytical methods and procedures that are accurate to within 5 percent of the instrument range and are approved by the Illinois EPA or USEPA.
- ix. If the owner or operator is required under 40 CFR 60.334(i) (1) or (3) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using for gaseous fuels, ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01. The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Illinois EPA or USEPA.

- x. The fuel analyses required under 40 CFR 60.335(b)(9) and (b)(10) may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.
- 11a. 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 12 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 12a. 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, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. 35 Ill. Adm. Code 212 Subpart A 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, 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.
- 13a. Pursuant to 40 CFR 60.334(h), the owner or operator of any stationary gas turbine subject to the provisions of 40 CFR 60 Subpart GG:
- i. Shall monitor the total sulfur content of the fuel being fired in the turbine, except as provided in 40 CFR 60.334(h)(3). The sulfur content of the fuel must be determined using total sulfur methods described in 40 CFR 60.335(b)(10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86, which measure the major sulfur compounds may be used; and
  - ii. Shall monitor the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in 40 CFR 60.332). The nitrogen content of the fuel shall be determined using methods described in 40 CFR 60.335(b)(9) or an approved alternative.

- iii. Notwithstanding the provisions of 40 CFR 60.334(h)(1), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u), regardless of whether an existing custom schedule approved by the Illinois EPA or USEPA for 40 CFR 60 Subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration:
  - A. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or
  - B. Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR Part 75 is required.
- b. Pursuant to 40 CFR 60.334(i), the frequency of determining the sulfur and nitrogen content of the fuel shall be as follows:
  - i. Gaseous fuel. Any applicable nitrogen content value of the gaseous fuel shall be determined and recorded once per unit operating day. For owners and operators that elect not to demonstrate sulfur content using options in 40 CFR 60.334(h)(3), and for which the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel shall be determined and recorded once per unit operating day.
  - ii. Custom schedules. Notwithstanding the requirements of 40 CFR 60.334(i)(2), operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in 40 CFR 60.334(i)(3)(i) and (i)(3)(ii), custom schedules shall be substantiated with data and shall be approved by the Illinois EPA or USEPA before they can be used to comply with the standard in 40 CFR 60.333.
- 14. Pursuant to 40 CFR 60.7(b), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

- b. Pursuant to 40 CFR 60.7(f), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.
- 15. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
- 16. 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.
- 17a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:

- i. Natural gas usage (mmscf/month and mmscf/year);
  - ii. Fuel oil type and usage (gallons/month and gallon/year);
  - iii. Sulfur content and heating value (% by weight and Btu/lb or gallon); and
  - iv. Monthly and annual CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOM emissions from the source (tons/month and tons/year) with supporting calculations.
- 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.
18. 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.
19. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by 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, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
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

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

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

Date Signed: \_\_\_\_\_

ECB:GB:jws

cc: Illinois EPA, FOS Region 1  
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the boilers and turbine operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario that results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (i.e., nitrogen oxides, carbon monoxide, and sulfur dioxide less than 100 tons per year each) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less fuel is used and control measures are more effective than required in this permit.

Emission Unit	E M I S S I O N S (Tons/Year)				
	CO	NO <sub>x</sub>	PM	SO <sub>2</sub>	VOM
3 Boilers (Natural Gas)	16.80	20.00	1.52	0.12	1.11
3 Boilers (Fuel Oil)	0.63	2.50	0.25	4.97	0.03
Gas Turbine (Natural Gas)	17.22	67.20	1.39	0.71	0.44
Duct Burner (Natural Gas)	0.34	0.40	0.03	0.01	0.02
Total:	34.99	90.10	3.19	5.81	1.60

GB:jws