

from May 1 through September 30 of each year being less than 10 tons and the source's baseline emissions also being less than 10 tons.

- b. The Permittee shall maintain the following records to allow the confirmation of actual VOM emissions during the seasonal allotment period:
 - i. Records of operating data and other information for each individual emission unit or group of related emission units at the source, as appropriate, to determine actual VOM emissions during the seasonal allotment period;
 - ii. Records of the VOM emissions, in tons, during the seasonal allotment period, with supporting calculations, for each individual emission unit or group of related emission units at the source, determined in accordance with the procedures that may be specified in this permit; and
 - iii. Total VOM emissions from the source, in tons, during each seasonal allotment period, which shall be compiled by November 30 of each year.
 - c. In the event that the source's VOM emissions during the seasonal allotment period equal or exceed 10 tons, the source shall become a participating source in the ERMS and beginning with the following seasonal allotment period, shall comply with 35 Ill. Adm. Code Part 205, by holding allotment trading units (ATUs) for its VOM emissions during each seasonal allotment period, unless the source obtains exemption from the ERMS by operating with seasonal VOM emissions of no more than 15 tons pursuant to a limitation applied for and established in a Clean Air Act Permit Program (CAAPP) permit or a Federally Enforceable State Operating Permit (FESOP).
 - d. Pursuant to 35 Ill. Adm. Code 205.316(a), any participating or new participating source shall not operate without a CAAPP permit or FESOP. Pursuant to 35 Ill. Adm. Code 205.316(a)(2), if a participating or new participating source does not have a CAAPP permit containing ERMS provisions and the source elects to obtain a permit other than a CAAPP permit, the source shall apply for and obtain a FESOP that contains, in addition to other necessary provisions, federally enforceable ERMS provisions, including baseline emissions, allotment for each seasonal allotment period, identification of any units deemed to be insignificant activities for purposes of the ERMS, emissions calculation methodologies, and provisions addressing all other applicable requirements of 35 Ill. Adm. Code Part 205.
- 3a. Boilers No. 6, 7, and 8 are subject to a New Source Performance Standard (NSPS) for small Industrial, Commercial, and Industrial Steam Generating Units, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

- b. At all times, the Permittee shall maintain and operate the boilers, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required by the NSPS, 40 CFR 60.11(d).
 - c. The Permittee shall fulfill applicable notification and recordkeeping requirements of the NSPS, 40 CFR 60.7 and 60.48c.
- 4a. 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, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.
- 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, pursuant to 35 IAC 212.123(b).
- 5a. 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-hr of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu), pursuant to 35 IAC 214.122(b)(2).
- b. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, pursuant to 35 IAC 214.301.
 - c. Pursuant to 35 IAC 214.304 the emissions from the burning of fuel at process emission units located in the Chicago major metropolitan area shall comply with Condition 5(a) (see also 35 IAC Part 214 Subparts B through F).
6. 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/hr) to exceed 200 ppm, corrected to 50 percent excess air, pursuant to 35 IAC 216.121.
- 7a. The Permittee shall not utilize 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 = $(0.00015) \times (\text{Gross heating value of oil, Btu/lb})$.

- b. Organic liquid by-products or waste materials shall not be used in these fuel combustion emission sources.
- c. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 8a. Total usage of natural gas of the boilers shall not exceed 70 mmscf/month and 700 mmscf/year.
- b. Total emissions from all natural gas-fired boilers shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Rate</u> (lb/10 ⁶ scf)	<u>Emissions</u>	
		<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
NO _x	100.0	3.50	35.00
CO	84.0	2.94	29.40
SO ₂	0.6	0.02	0.21
VOM	5.5	0.19	1.93
PM	7.6	0.27	2.66

These limits are based on standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998) for natural gas fired boilers and the maximum monthly and annual natural gas usage of the boilers.

- c. Natural gas shall be the only fuel fired in the boilers. Use of any other fuel will require a revised permit.
- 9a. Emissions and operation of the two 2,836 hp and one 764 hp diesel-powered generators shall not exceed the following limits:
 - i. The total hours of operation for each engine shall not exceed 350 hours per year.
 - ii. Emissions from the two 2,836 hp diesel powered generators:

<u>Pollutant</u>	<u>Emission Rate</u> (lb/Hp-Hr)	<u>Emissions</u>	
		<u>Each Engine</u> (lbs/Hour)	<u>Two Engines</u> (Tons/Year)
NO _x	0.024	68.06	23.82
CO	0.0055	15.60	5.46
SO ₂	0.0089 S	7.07	2.47
VOM	0.000642	1.82	0.64
PM	0.0007	1.98	0.69

These limits represent emission limits based on manufacturer's emission data, and maximum operation of 350 hours per year for each engine. S indicates that the weight % of sulfur in the oil should be multiplied by the value given.

iii. Emissions from the 764 hp diesel powered generator:

<u>Pollutant</u>	<u>Emission Rate</u> (lb/Hp-Hr)	<u>Emissions</u>	
		<u>(Lb/Hour)</u>	<u>(Tons/Year)</u>
NO _x	0.031	23.68	4.14
CO	0.00668	5.10	0.89
SO ₂	0.00205	1.57	0.27
VOM	0.0025141	1.92	0.34
PM	0.00220	1.68	0.29

These limits represent emission limits based on manufacturer's emission data, and maximum operation of 350 hours per year for each engine.

- b. Distillate fuel oil shall be the only fuels fired in the diesel powered generators.
10. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, 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 Permit (CAAPP).
 11. 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).
 - 12a. Pursuant to 35 IAC 212.109, and 212.110, testing for particulate matter emissions shall be performed as follows:
 - i. Except as otherwise provided in 35 IAC Part 212, and except for the methods of data reduction when applied to 35 IAC 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 IAC 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 [35 IAC 212.109].
 - ii. Measurement of particulate matter emissions from stationary emission units subject to 35 IAC Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E [35 IAC 212.110(a)].

- iii. 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 [35 IAC 212.110(b)].
 - iv. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 IAC 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 [35 IAC 212.110(c)].
- 13a. The Permittee shall maintain records of the following items to demonstrate compliance with the conditions of this permit:
- i. Pursuant to 35 IAC 218.129(f), each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 IAC Parts 218 or 219 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel;
 - ii. Design information for the tanks showing the presence of a permanent submerged loading pipe;
 - iii. Maintenance and repair records for the tanks, as related to the repair or replacement of the loading pipe;
 - iv. Monthly and annual records of natural gas usage the boilers (mmscf/month and mmscf/year);
 - v. Hours of operation for each diesel-powered generator (hours/month and hours/year);
 - vi. The sulfur content of the fuel oil used in the diesel-powered generators (% by weight), this shall be recorded for each shipment of fuel oil delivered to the source;
 - vii. Monthly and annual gasoline throughput (gallons/month and gallons/year)
 - viii. Monthly and aggregate annual emissions of CO, NO_x, PM, SO₂, and VOM from the boilers and generators with supporting calculations (tons/month and tons/year); and
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and 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 request for records during the course of a source inspection.

14a. If there is an exceedance of 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. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, a description of the exceedances or violation, and efforts to reduce emissions and future occurrences.

b. The following addresses should be utilized for the submittal of reports, notifications, and renewals:

i. Illinois EPA - Air Compliance Section

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

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional 1
9511 West Harrison
Des Plaines, Illinois 60016

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

If you have any questions concerning this permit, please call Dwayne Booker at 217/782-2113.

Edwin C. Bakowski, P.E.

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Acting Manager, Permit Section
Division of Air Pollution Control

DES:DLB:

cc: IEPA, FOS Region 1
Lotus Notes

Attachment A

This attachment provides a summary of the maximum emission from the eight (8) boilers, two (2) standby diesel-powered generators, and one (1) small emergency diesel-powered generator 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 this source. This is combusting 700 mmscf/year of natural gas consumption in the boilers, 350 hours per year of operation for each of the diesel-powered generators. The resulting maximum emissions are below the levels, (e.g., 100 tons per year of NO_x and 100 tons per of SO₂) at which this source would be considered a major source for purpose 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 combusted and control measures are more effective than required in this permit.

a. 2000 Lucent Lane, Naperville (I.D. #043803AAD):

<u>Emission Units</u>	Total Emissions (Tons/Year)				
	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>VOM</u>	<u>PM</u>
Natural Gas Boilers	35.00	29.40	0.21	1.93	2.66
Diesel-Powered Generators (2,836 hp)	23.82	5.46	2.47	0.64	0.69
Diesel-Powered Generator (764 hp)	4.14	0.89	0.27	0.34	0.29
Totals:	62.96	35.75	2.95	2.91	3.64

b. 2601 Lucent Lane, Lisle (I.D. #043055AAE):

<u>Emission Units</u>	Total Emissions (Tons/Year)				
	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>VOM</u>	<u>PM</u>
Natural Gas Boilers	22.20	18.65	0.13	1.22	1.70
#2 Fuel Oil Boilers	0.10	0.03	0.20	--	0.01
Diesel-Powered Generators (1,315 hp)	5.53	1.27	0.54	0.16	0.16
Diesel-Powered Generator (805 hp)	3.38	0.78	0.35	0.10	0.10
Diesel-Powered Generator (490 hp)	2.66	0.57	0.18	0.22	0.19
Diesel-Powered Generator (131 hp)	<u>0.71</u>	<u>0.15</u>	<u>0.05</u>	<u>0.06</u>	<u>0.05</u>
Totals:	34.58	21.45	1.45	1.76	2.21

c. Collocated Source Totals:

<u>Source</u>	Total Emissions (Tons/Year)				
	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>VOM</u>	<u>PM</u>
2601 Lucent Lane, Lisle (I.D. #043055AAE)	34.58	21.45	1.45	1.76	2.21
<u>2000 Lucent Lane, Naperville (I.D. #043803AAD)</u>	<u>62.96</u>	<u>35.75</u>	<u>2.95</u>	<u>2.91</u>	<u>3.64</u>
Totals:	97.54	57.20	4.40	4.67	5.85

DES:DLB:

PROJECT SUMMARY

I. INTRODUCTION

Lucent Technologies, Inc. has submitted an application for a federally enforceable state operating permit (FESOP) consisting of support equipment for their research laboratory, including eight steam boilers, two standby diesel-powered generators, and one small emergency diesel-powered generator. This permit prevents the site from being classified as a major source of emissions under the Clean Air Act. Therefore, Lucent Technologies, Inc. will not have to obtain a federal permit under the Clean Air Act Permit Program. The FESOP would contain limitations and accompanying recordkeeping and reporting requirements to assure that the site is operated as a non-major source.

II. SOURCE DESCRIPTION

The eight boilers, three emergency diesel-powered generators and gasoline dispensing facility are used by Lucent Technologies, Inc. to generate steam and electrical power for their own usage. Each generator-set consists of a reciprocating engine, which drives an electric generator by means of a rotating shaft. The reciprocating engines are driven by the combustion of distillate diesel fuel oil.

III. EMISSIONS

Air pollutants are generated when these boilers and diesel powered-generators are in operation. These emissions occur from the combustion of diesel fuel or natural gas and are exhausted through a pipe to a vent located on the roof.

The primary air pollutants from these boilers and diesel-powered generators are nitrogen oxide (NO_x), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide (SO₂), and particulate matter (PM).

NO_x is formed thermally by the combination of oxygen and nitrogen in the air at the temperature at which the fuel is burned. CO, VOM, and PM are formed from incomplete combustion of the fuel. Emissions of SO₂ are found in varying amounts from the combustion of diesel fuel, depending on the sulfur content of the fuel.

The proposed permit includes limitations that restrict the potential annual emissions of NO_x, CO, VOM, and SO₂ to levels below major source thresholds.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The Board has standards for sources of particulate matter, volatile organic material, and sulfur dioxide for boilers, reciprocating engines, and gasoline dispensing. This site readily complies with those Board standards.

The USEPA has also adopted standards for small steam generators for which construction was commenced after June 9, 1989, the federal New Source Performance Standards (NSPS), 40 CFR 60 Subpart Dc. The Illinois EPA is administering the NSPS in Illinois on behalf of the United States EPA under a delegation agreement. This permit addresses compliance with the USEPA's standard for Small Steam Industrial-Commercial-Institutional Steam Generating Units.

V. PROPOSED PERMIT

The conditions of the proposed permit contain limitations and requirements to assure that this site will be operated as a non-major source. The permit establishes limitations on the amount of fuel that may be burned in the boilers and the number of hours in which the diesel-powered generators may be operated.

The permit conditions also establish appropriate compliance procedures, including record keeping requirements and reporting requirements. Lucent Technologies, Inc. must carry out these procedures on a continual basis to demonstrate that the boilers and generators are operating within the limitations established by the permit.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that these boilers, generators, and gasoline dispensing facility meet all applicable state and federal air pollution control requirements, subject to the conditions of the draft permit. The Illinois EPA is therefore proposing to issue a permit with federally enforceable limits for this source.

Comments are requested on these proposed conditions on the draft permit. If substantial public interest is shown in this matter, in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 164.