STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

DARRYL N. BROWN
COMMISSIONER

Bangor High School
Penobscot County
Bangor, Maine
A-380-71-G-R (SM)

Departmental
Findings of Fact and Order
Air Emission License

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. Bangor School Department has applied to renew their Air Emission License permitting the operation of emission sources associated with their Bangor High School (BHS) educational facility.

2. The equipment addressed in this license is located at 885 Broadway, Bangor, Maine.

3. BHS has requested this air emission license renewal include dual-fuel firing of #2 fuel oil and natural gas.

Boilers

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type, % sulfur	Stack #
Boiler 1	12.25	87.5	#2 fuel oil, 0.5%	1
	12.25	11,900 scf/hr	Natural gas, negligible	
Boiler 2	12.25	87.5	#2 fuel oil, 0.5%	2
	12.25	11,900 scf/hr	Natural gas, negligible	

Electrical Generation Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Fuel Type, % sulfur
Generator 1	1.7	12.6	Diesel, 0.0015%

B. Application Classification

The application for BHS does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended). With the facility wide fuel limit, the facility is licensed below the major source thresholds and is considered a synthetic minor.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers

Boilers 1 and 2 are each rated at 12.25 MMBtu/hr, fire #2 fuel oil and natural gas, and are used to provide heat to the facility. Boilers 1 and 2 were installed in 2001 and are therefore subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BPT analysis for Boilers 1 and 2 (12.25 MMBtu/hr each) is the following:

1. The total #2 fuel oil use for the facility shall not exceed 150,000 gal/year, based on a calendar year, with a maximum sulfur content not to exceed 0.5% by weight.

2. Fuel sulfur content regulation is given in 06-096 CMR 106 (as amended), however, in this case meeting the criteria in ASTM D396 when firing #2 fuel

oil was required in order to maintain the facility's status as a synthetic minor. Firing of natural gas is more stringent and shall also be considered BPT.

3. PM/PM_{10}, SO_2, NO_x, CO and VOC emission limits when firing natural gas were based on AP-42 dated 7/98.
4. When firing natural gas, visible emissions from Boilers 1 and 2 (each) shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.
5. When firing #2 fuel oil, PM emission limits are given by 06-096 CMR 103 (as amended). The PM_{10} limits are derived from the PM limits.
6. When firing #2 fuel oil, NO_x emission limits are based on data from similar #2 oil fired boilers of this size and age and from AP-42 data dated 7/98.
7. When firing #2 fuel oil, CO and VOC emission limits are based upon AP-42 data dated 9/98.
8. When firing #2 fuel oil, visible emissions from the boilers shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

C. Back-Up Generator

BHS operates one back-up diesel generator with a maximum design capacity of 1.7 MMBtu/hr.

Back-up generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

Generator 1 was installed and manufactured in 1994. Therefore, Generator 1 is not subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* which applies to generators ordered after July 11, 2005 and manufactured after April 1, 2006.

Generator 1 is not subject to 40 CFR Part 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* because of the nature of BHS operations. Subpart ZZZZ (63.6590(b)(3)) excludes residential, institutional, and commercial uses; secondary educational facilities are defined as institutional use.

A summary of the BPT analysis for Generator 1 (1.7 MMBtu/hr) is the following:

1. Generator 1 shall fire only diesel fuel with a maximum sulfur content not to exceed 0.0015% by weight.
2. Generator 1 shall be limited to 500 hr/yr of operation based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours.
3. Fuel sulfur content is regulated by 06-096 CMR 106; however in this case a BPT analysis for SO_2 determined a more stringent limit of 0.0015% was appropriate and shall be used.
4. PM emission limits are given in 06-096 CMR 103. The PM_{10} limits are derived from the PM limits.
5. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
6. Visible emissions from the back-up generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

D. Annual Emissions

BHS shall be restricted to the following annual emissions, based on a calendar year total:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC
Boilers (#2 fuel oil)	1.3	1.3	3.7	3.2	0.38	0.020
Boilers (natural gas)	0.53	0.53	0.0	0.010	0.010	0.00
Generator 1	0.050	0.050	0.0	1.9	0.41	0.050
Total TPY	**1.9**	**1.9**	**3.7**	**5.1**	**0.8**	**0.2**

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

Pollutant	Tons/Year
PM	25
PM_{10}	25
SO_2	50
NO_x	100
CO	250

Based on the total facility licensed emissions, BHS is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-380-71-G-R (SM) subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive

dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [06-096 CMR 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
   1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
   2. pursuant to any other requirement of this license to perform stack testing.

B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 CMR 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) **Boilers**

A. Boilers 1 and 2 shall not exceed 150,000 gal/yr of #2 fuel oil which meets the requirements of ASTM D396. Compliance shall be demonstrated by fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. Records of annual fuel use shall be kept on a calendar year basis. [06-096 CMR 115, BPT]

B. Boilers 1 and 2 shall fire natural gas and records of annual fuel use shall be kept on a calendar year basis. Compliance shall be demonstrated by fuel receipts from the supplier. [06-096 CMR 115, BPT]

C. When firing #2 fuel oil emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler 1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boiler 2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

D. When firing natural gas emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler 1	PM	0.05	06-096 CMR 103(2)(B)(1)(a)
Boiler 2	PM	0.05	06-096 CMR 103(2)(B)(1)(a)

E. Emissions from Boilers 1 and 2 shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boilers	2.1	2.1	4.3	3.7	0.44	0.020

F. When firing #2 fuel oil, visible emissions from Boilers 1 and 2 shall each not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

G. When firing natural gas, visible emissions from Boilers 1 and 2 shall each not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

(17) **Back-up Generator**

A. BHS shall limit the Back-up Generator to 500 hr/yr of operation (based on a calendar year). An hour meter shall be maintained and operated on the Back-up Generator. [06-096 CMR 115, BPT]
B. The Back-up Generator shall only be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The Back-up Generator shall not be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BPT]
C. The Back-up Generator shall fire diesel fuel with a sulfur limit not to exceed 0.0015% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]
D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator 1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

E. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator 1	0.20	0.20	0.0	7.5	1.6	0.60

F. Visible emissions from the Back-up Generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(18) Boilers 1 and 2 are subject to Federal New Source Performance Standards, Subpart Dc. BHS shall comply with all requirements of 40 CFR Part 60, Subpart Dc including, but not limited to, the following:

A. BHS shall record and maintain records of the amounts of each fuel combusted during each day.

B. BHS shall submit to EPA and the Department semi-annual reports. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each 6-month period.

C. The following address for EPA shall be used for any reports or notifications required to be copied to them:

Compliance Clerk
USEPA Region 1
1 Congress Street
Suite 1100
Boston, MA 02114-2023

(19) BHS shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 24th DAY OF February, 2011.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Patricia W. Aho, Dept. Comm. for
DARRYL N. BROWN, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/19/2011
Date of application acceptance: 1/19/2011

Date filed with the Board of Environmental Protection:

This Order prepared by Amanda L. Gray, Bureau of Air Quality.

Filed
FEB 24 2011
State of Maine
Board of Environmental Protection