



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PATRICIA W. AHO
COMMISSIONER

**PENOBSCOT JOB CORPS CENTER
PENOBSCOT COUNTY
BANGOR, MAINE
A-944-71-B-N**

**DEPARTMENTAL
FINDINGS OF FACT AND ORDER
AIR EMISSION LICENSE
AFTER-THE-FACT**

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., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

The Penobscot Job Corps Center (PJC) is located at 1375 Union Street in Bangor, Maine. The Air Emission License for PJC expired on October 3, 2011 and a complete application wasn't submitted to the Department until March 12, 2012. PJC has applied to renew their expired license permitting the operation of emission sources associated with their training facility. The PJC offers training to students in culinary arts, construction, and business.

B. Emission Equipment

The following equipment at PJC is addressed in this air emission license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBTU/hr)	Fuel Type	Maximum Firing Rate (i.e. gal/hr)	Date of Manufacture	Stack Height (ft)
Boiler #1	1.67	#2 oil, natural gas	12.0	2001	48
Boiler #2	1.67	#2 oil, natural gas	12.0	2001	25
Boiler #3	2.74	#2 oil, natural gas	19.6	1994	25
Boiler #4	1.82	#2 oil, natural gas	13.0	2004	25

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Boiler #5	2.79	#2 oil, natural gas	19.9	1994	18
Boiler #6	1.82	#2 oil, natural gas	13.0	2003	18
Boiler #7	2.79	#2 oil, natural gas	19.9	1994	18
Boiler #8	2.79	#2 oil, natural gas	19.9	1994	18
Boiler #9	1.20	#2 oil, natural gas	8.6	1994	18
Boiler #10	1.68	#2 oil, natural gas	12.0	2001	18
Boiler #11	1.68	#2 oil, natural gas	12.0	2001	18

PJC operates other units less than 1.0 MMBtu/hr that are considered insignificant according to Appendix B of 06-096 CMR 115 of the Department regulations. These units are listed in the application and mentioned in this license only for inventory purposes.

C. Application Classification

PJC is classified as an existing source that is applying for a renewal of its air emission license, however, the renewal is considered “after the fact” since the application was submitted after the five year license term. The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations, 06-096 CMR 115 (as amended)*. The facility is considered a “natural minor” source because its maximum potential emissions will not exceed major source emission thresholds.

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 an after-the-fact renewal requires an analysis similar to a Best Available Control Technology analysis per 06-096 CMR 115 (as amended).

B. Boiler # 1, #2, #3, #4, #5, #6, #7, #8, #9, #10, & #11

Boilers #1 through #11 each have a maximum design heat input capacity of less than 3.0 MMBtu/hr, however, the combined fuel burning equipment is over 10.0 MMBtu/hr and therefore an air emissions license is required per 06-096 CMR 115 (as amended) of the Department's regulations. The boilers were manufactured between 1994-2003 and all currently fire #2 fuel oil. The boilers are used to supply heat and hot water for the facility's buildings and dorms. PJC is currently negotiating with a natural gas supplier and may convert its boilers to burn natural gas later this year or for heating season 2013. PJC is requesting the flexibility to fire both #2 fuel oil and natural gas. Converting units of like-kind from firing #2 fuel oil to natural gas will decrease all criteria pollutants on a short term (lb/hr) and long term (tons/year) basis.

The primary regulated pollutants emitted from these boilers are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). Based on the size of the boilers, the Department determines that any additional pollution control devices would be economically unjustified. Therefore, the Department has determined that firing #2 fuel oil and/or natural gas in these boilers represents BACT for Boilers #1 - #11.

A summary of the BACT analysis for Boiler #1 - #11 is the following:

1. Fuel Burning Equipment Particulate Emission Standard, 06-096 CMR 103 regulates PM emission limits from units greater than 3.0 MMBtu/hr, however, all PJC units are less than 3.0 MMBtu/hr and therefore this regulation does not apply. Pound per hour PM BACT emission limits will be based on an emission factor of 0.08 lb/MMBtu. The PM₁₀ limits are derived from the PM limits.
2. Low Sulfur Fuel 06-096 CMR 106 regulates fuel sulfur content, however in this case a BACT analysis for SO₂ determined a more stringent requirement to use #2 fuel oil which meets the criteria in ASTM D396 or fire natural gas.
3. NO_x emission limits are based on AP-42 data from similar boilers of this size and age. The boilers will meet a pound per hour NO_x emission limit based on the size of the unit and the AP-42 factor of 20 lb/1000 gallons.
4. CO (5 lb/1000 gallons) and VOC (0.2 lb/1000 gallons) emission limits are based upon AP-42 data dated 9/98. BACT will require lb/hr emission limits.
5. Visible emissions from the boiler fire fuel oil shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

6. Visible emissions from each boiler firing natural gas 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.

PJC shall be limited to 250,000 gallons/yr of #2 fuel oil on a calendar year basis. Prior to January 1, 2016, the fuel oil fired in the boilers shall be ASTM D396 compliant #2 fuel oil (maximum sulfur content of 0.5% by weight). Per 38 MRSA §603-A(2)(A)(3), beginning January 1, 2016, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm).

Per this license, PJC will also be licensed to fire natural gas. Currently the facility is licensed to fire a maximum of 250,000 gallons per year of #2 fuel oil. This equates to approximately 35,000 MMBtu/year based on the estimated heating value of distillate oil at 140,000 Btu/gallon, this in-turn can be calculated to roughly 33 million standard cubic feet of natural gas per year (33 million scf/yr) based on a heating value of natural gas at 1030 Btu/scf. Therefore, to avoid opening the air emissions license every time PJC converts a boiler to fire natural gas, PJC will keep the facility's total MMBtu/yr to less than 35,000 MMBtu/year either when firing fuel oil or natural gas. All units converted to fire natural gas must be existing or of like-kind.

40 CFR Part 60 Subpart Dc

Boilers #1 - #11 are each less than 10.0 MMBtu/hr in maximum heat design capacity and are therefore not subject to the 40 CFR Part 60 New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

40 CFR Part 63 Subpart JJJJJ

The boilers at PJC may be subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR Part 63 Subpart JJJJJ). The units are considered existing oil boilers rated less than 10 MMBtu/hr. If the units are converted to burn natural gas, Subpart JJJJJ is not applicable to units firing gas.

For informational purposes, a summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Maine Department of Environmental Protection has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however facility is still subject to the requirements. Notification forms and

additional rule information can be found on the following website:
<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to EPA was due on September 17, 2011. [40 CFR Part 63.11225(a)(2)] or for new sources - within 120 days after the source becomes subject to the standard.

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented to include the tune-up of applicable boilers by March 21, 2012, according to the rule currently in place. [40 CFR Part 63.11196(a)(1)] or for new sources – upon startup of the boiler [40 CFR Part 63.11196(c)] However, a No Action Assurance letter was issued on March 13, 2012, stating that EPA will exercise its enforcement discretion to not pursue enforcement action for failure to complete the required tune-up by the stated compliance date. The rule is expected to have a future compliance date in either 2013 or 2014 once the final revisions are promulgated.

(b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:

1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; however, the burner must be inspected at least once every 36 months. [40 CFR Part 63.11223(b)(1)]
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. [40 CFR Part 63.11223(b)(3)]
4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million (ppm), by volume, and oxygen in volume percent, before and after adjustments are made. [40 CFR Part 63.11223(b)(5)]

6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of start-up. [40 CFR Part 63.11223(b)(7)]
 - (c) A Notification of Compliance Status shall be submitted to EPA no later than 120 days after conducting the initial boiler tune-up. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
 - (d) The facility shall implement a boiler tune-up program after the initial tune-up and initial compliance report has been submitted.
 1. Each tune-up shall be conducted at a frequency specified by the rule and based on the size and age of the boiler. [40 CFR Part 63.11223(a)]
 2. The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the type and amount of fuel used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

C. Shop Emissions

PJC also operates wood working equipment in two shop areas of their facility that emit particulate emissions to the outside. The table saw, jointer, planer, router,

and sweep tray exhaust through dust collection equipment and cyclone to the outside. PJC shall limit visible emissions and particulate by operating and maintaining the dust collection and cyclone equipment.

To meet BACT, the PJC shall maintain the dust collectors to limit visible emissions from the shop areas to 10% opacity or less on a six (6) minute block average basis.

D. Annual Emissions

1. Total Annual Emissions

PJC shall be restricted to the following annual emissions, based on a calendar year basis. The tons per year limits were calculated based on a maximum licensed allowed fuel limit of 250,000 gallons of #2 fuel oil per year (all ton per year pollutant emissions were less when firing natural gas):

Total Licensed Annual Emissions for the Facility
Tons/year

(used to calculate the annual license fee)

Pollutant	Tons/year
PM	2.1
PM ₁₀	2.1
SO ₂	6.2
NO _x	6.1
CO	0.6
VOC	0.1

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming

potentials contained in 40 CFR Part 98, PJC is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

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 is not required for a renewal if the total emissions of any pollutant released do not exceed the following and there are no extenuating circumstances:

Pollutant	Tons/Year
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the total facility licensed emissions, PJC is below the emissions level required for modeling.

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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-944-71-B-N 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-A. [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. Fuel

1. Total fuel use for the facility shall not exceed 250,000 gal/yr of #2 fuel oil, or 33 million scf/year of natural gas based on a calendar year basis. PJC shall keep the facility's total fuel consumption to less than 35,000 MMBtu/year when firing fuel oil, natural gas, or a combination of the two fuels.
2. Prior to January 1, 2016, the #2 fuel oil fired in the boilers shall be ASTM D396 compliant (max. sulfur content of 0.5% by weight).

[06-096 CMR 115, BPT]

3. Beginning January 1, 2016, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
4. Beginning January 1, 2018, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following either when firing #2 fuel oil or natural gas: [06-096 CMR 115, BACT]

	(Boilers #1,2,9,10,11)	(Boilers #3,5,7,8)	(Boilers #4, 6)
<u>Pollutant</u>	<u>lb/hr</u>	<u>lb/hour</u>	<u>lb/hour</u>
PM	0.2	0.3	0.2
PM ₁₀	0.2	0.3	0.2
SO ₂	0.6	1.0	0.7
NO _x	0.6	1.0	0.7
CO	0.1	0.1	0.1
VOC	0.1	0.1	0.1

- C. Visible emissions from each boiler firing #2 fuel oil shall 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]
- D. Visible emissions from each boiler firing natural gas 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. [06-096 CMR 115, BACT]

(17) PJC shop emissions shall be operated with dust collection systems. The dust collectors shall limit visible emissions to 10% opacity or less on a six (6) minute block average basis.

PJC shall maintain the following records:

- a) PJC will perform daily visual inspections of the dust collection system to assure proper operation and maintain documentation that this has been done in accordance with their Standard Operating Procedure manual.
- b) A description of any maintenance or repairs of the dust collection system that resulted from the daily visual inspection shall be kept on file.

(18) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

(19) PJC 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 15th DAY OF August, 2012.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Melanie L. Lefebvre
PATRICIA W. ALCO, COMMISSIONER

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

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 12, 2012

Date of application acceptance: March 19, 2012

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality.

