



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

York County Jail)
York County) Departmental
Alfred, Maine) Findings of Fact and Order
A-848-71-C-N) Air Emission License
After-The-Facts

After review of the air emissions license renewal 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 York County Jail (YCJ) located in Alfred, Maine has applied, after the fact, for an Air Emission License renewal permitting the operation of emission sources associated with their correctional facility. YCJ's previous Air Emission License (A-848-71-A-N) expired on January 17, 2008.

B. Emission Equipment

YCJ is applying to include the operation of the following equipment to the facility's Air Emissions License:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler #1	8.0	37.9	#2 fuel oil, 0.5%	1
Boiler #2	8.0	37.9	#2 fuel oil, 0.5%	2
Boiler #3	2.3	16.6	#2 fuel oil, 0.5%	1

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Generator #1	1500	103.6	#2 oil, 0.5%	N/A

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143

York County Jail
York County
Alfred, Maine
A-848-71-C-N

)
)
)
2

Departmental
Findings of Fact and Order
Air Emission License
After-The-Facts

C. Application Classification

The application for YCJ 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 (last amended December 24, 2005).

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 (last amended December 1, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts. BPT for an after-the-fact renewal requires an analysis similar to a Best Available Control Technology analysis per 06-096 CMR 115.

B. Facility Boilers

YCJ operates two boiler units, designated Boilers #1 and #2. Boilers #1 and #2 are primarily used to satisfy the facility's heating and hot water needs. Boilers #1 and #2 were each manufactured by Bryan Boilers, installed in 2002 and rated at 8.0 MMBtu/hr each. YCJ's previous license included the operation of a third boiler, designated Boiler #3. Boiler #3 had not been installed but YCJ plans to install Boiler #3 sometime during 2009. YCJ plans to utilize Boiler #3 in the summer months when heating demands are not large enough to warrant the use of the facility's larger boilers. YCJ has indicated that Boiler #3 will be a new boiler with an approximate maximum design heat input capacity of 2.3 MMBtu/hr firing #2 fuel oil. Along with Boiler #1, Boiler #3 will exhaust to Stack #1.

YCJ's expired air emission license (A-848-71-A-N) established a #2 fuel use limit of 350,000 gallons per year for the boilers. YCJ has not proposed and does not expect that an increase in their licensed annual #2 fuel usage limit will be necessary.

The MEDEP Bureau of Air Quality has determined that BPT/BACT for sulfur content of #2 fuel oil is the use of #2 fuel oil that meets the sulfur content criteria found in ASTM D396 for #2 fuel oil (0.5% sulfur by weight).

A summary of the BACT analysis for Boilers #1, #2 and #3 are as follows:

1. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103, (last amended November 3, 1990) regulates PM emission limits, however, BACT establishes a factor for PM and PM₁₀ emissions of 0.08 lb/MMBtu for each boiler.
2. SO₂ emissions limits are based on the firing of #2 fuel oil which meets the sulfur content criteria found in ASTM D396 for #2 fuel oil (0.5% sulfur by weight).
3. SO₂, NO_x, CO, VOC emissions rates are based on AP-42 emission factors for boilers of less than 100 MMBtu/hr dated 9/98.
4. Visible Emissions:
 - a. Visible emissions from Stack #1 shall not exceed 20% opacity on a six-minute block average, except for 1 six-minute block average in a 3-hour period.
 - b. Visible emissions from Stack #2 shall not exceed 20% opacity on a six-minute block average, except for 1 six-minute block averages in a 3-hour period.

C. Back-up Generator #1

YCJ operates a back-up diesel generator, designated Generator #1. Generator #1 is a Cummins 1500 KW (14.5 MMBtu/hr) generator manufactured in 2002. Generator #1 is used to provide emergency back-up power for the facility. Generator #1 is set up to draw fuel from the same tank as the boilers.

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.

A summary of the BACT analysis for Generator #1 is as follows:

1. The Generator #1 shall be limited to 500 hr/yr of operation based on a twelve-month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. Based on 500 hours of operation per year the generator shall not exceed 51,800 gal/year of #2 fuel oil, based on a twelve-month rolling total.

2. 06-096 CMR 103 regulates PM emission limits. For sources greater than 3 MMBtu/hour, a limit of 0.12 lb/MMBtu shall be used. The PM₁₀ limits are derived from the PM limits.
3. Typically, BACT for fuel sulfur content of a generator capable of firing diesel fuel is 0.05% by weight. However the cost associated with constructing, operating and maintaining a separate storage tank for the generator is not economically justified considering the generators limited use and the small difference in sulfur emissions. Therefore a sulfur limit which meets the sulfur content criteria found in ASTM D396 for #2 fuel oil (0.5% sulfur by weight) is justified and shall be used.
4. The SO₂ emission limit is based on mass balance and uses a 0.5% sulfur content by weight for #2 fuel oil which calculates to approximately 0.5 lb/MMBtu.
5. NO_x, CO, and VOC emission limits are based upon EPA AP-42 data dated 10/96 for diesel industrial engines. This assumes firing #2 fuel oil is equivalent to firing diesel fuel.
6. Visible emissions from Generator #1 shall each not exceed 20% opacity on a six-minute block average, except for no more than two six-minute block averages in a continuous 3-hour period.

D. Annual Emission Restrictions

Y CJ shall be restricted to the following annual emissions, based on a 12 month rolling total:

- Y CJ is restricted to firing no greater than 350,000 gallons of #2 fuel oil with a sulfur content not to exceed 0.5% by weight in the facility's boiler units.
- Y CJ is restricted to firing no greater than 51,800 gallons of #2 fuel oil with a sulfur content not to exceed 0.5% by weight in the facility's back-up diesel generator.

Total Allowable Annual Emission for the Facility
(used to calculate the annual license fee)

Pollutant	Tons/Year		
	Boilers	Diesel	Total
PM	1.96	0.44	2.4
PM ₁₀	1.96	0.44	2.4
SO ₂	8.70	1.28	10.0
NO _x	3.50	15.99	19.5
CO	0.88	3.44	4.3
VOC	0.06	1.27	1.3

York County Jail)
York County)
Alfred, Maine)
A-848-71-C-N 5

Departmental
Findings of Fact and Order
Air Emission License
After-The-Facts

III. AMBIENT AIR QUALITY ANALYSIS

According to *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 1, 2005), the level of air quality analyses required for a minor source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, YCJ is below the emissions level required for modeling or monitoring and the Department has determined that Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

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-848-71-C-N subject to the following conditions:

Severability: The invalidity or unenforceability of any provision, or part thereof, of this Air Emission License shall not affect the remainder of the provision or any other provisions. This Air Emission 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 (Title 38 MRSA §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 06-096 CMR 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.
- (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:

(i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

- a. 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
- b. pursuant to any other requirement of this license to perform stack testing.

(ii) 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

(iii) 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:

(i) 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

(ii) 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

(iii) 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) Boiler Units

- A. Total facility fuel use for the boiler units shall not exceed 350,000 gals/yr of #2 fuel oil with a sulfur content no greater than 0.5% sulfur by weight based on a twelve-month rolling total. [06-096 CMR 115, BPT/BACT]
- B. Compliance with the above fuel limit shall be based on fuel receipts from the supplier showing the quantity of fuel delivered and supplier certification indicating the sulfur content of the purchased fuel. Fuel use records shall be maintained on a monthly basis, in addition to the twelve-month rolling total. [06-096 CMR 115, BPT/BACT]
- C. Emissions shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	lb/MMbtu	0.12	-	-	-	-	-
	lb/hr	0.6	0.6	2.8	1.1	0.3	0.02
Boiler #2	lb/MMbtu	0.12	-	-	-	-	-
	lb/hr	0.6	0.6	2.8	1.1	0.3	0.02
Boiler #3	lb/hr	0.2	0.2	0.8	0.3	0.1	0.01

[06-096 CMR 115, BPT/BACT]

D. Visible emissions

1. Visible emissions from Stack #1 shall not exceed 20% opacity on a six-minute block average, except for 1 six-minute block average in a 3-hour period. [06-096 CMR 101]
2. Visible emissions from Stack #2 shall not exceed 20% opacity on a six-minute block average, except for 1 six-minute block averages in a 3-hour period. [06-096 CMR 101]

(17) Back-up Generator #1

- A. Generator #1 shall not operate more than 500 hr/year based on a 12 month rolling total. To demonstrate compliance with the hours of operation restriction, YCJ shall operate and maintain an hour meter on Generator #1. [06-096 CMR 115, BPT/BACT]
- B. Generator #1 shall be operated only when normal testing procedures, as recommended by the manufacturer, are being performed or in case of an emergency as defined in 06-096 CMR 100. [06-096 CMR 115, BPT/BACT]
- C. A log documenting the dates, times, meter readings and reason of operation for Generator #1 shall be kept. The log shall include receipts from the fuel oil supplier and supplier certification indicating fuel oil sulfur content. [06-096 CMR 115, BPT/BACT]
- D. Total fuel use for Generator #1 shall not exceed 51,800 gal/year of #2 fuel oil (twelve-month rolling total) with a maximum sulfur content not to exceed 0.5% by weight. Fuel use by generator #1 shall be documented in the fuel use log. [06-096 CMR 115, BPT/BACT]
- E. Emissions from the Generator #1 shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Generator #1	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	1.8	1.8	7.3	63.9	13.8	5.1

[06-096 CMR 115, BPT/BACT]

- F. Visible emissions from Generator #1 shall each not exceed 20% opacity on a six-minute block average, except for no more than two six-minute block averages in a continuous 3-hour period. [06-096 CMR 101]

York County Jail)
York County)
Alfred, Maine)
A-848-71-C-N 10

Departmental
Findings of Fact and Order
Air Emission License
After-The-Facts

(18) YCJ 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 (Title 38 MRSA §605-C).

DONE AND DATED IN AUGUSTA, MAINE THIS 26th DAY OF February 2009.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooker Jr
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

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

Date of initial receipt of application: January 7, 2009

Date of application acceptance: January 26, 2009

Date filed with the Board of Environmental Protection: _____

This Order prepared by, Peter G. Carleton, Bureau of Air Quality

