Washington County Crematorium
Washington County
Calais, Maine
A-1013-71-B-R

Departmental
Findings of Fact and Order
Air Emission License
Renewal

FINDINGS OF FACT

After review of the air emission 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 Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

1. Washington County Crematorium (WCC) has applied to renew their Air Emission License, permitting the operation of a Class IV-A crematory incinerator.

2. The equipment addressed in this license is located at the Calais Cemetery, Cemetery Road, Calais, ME.

B. Emission Equipment

The crematory incinerator is a B & L Cremation Systems, Inc., Model N-20 with the following specifications:

Class Incinerator	IV-A
No. of Chambers	2
Type of Waste	Type 4
Max. Design Combustion Rate (lb/hr)	150
Auxiliary Fuel Input: **Primary Chamber (Btu/hr)** **Secondary Chamber (Btu/hr)**	Propane 0.5 1.0
Emission Control	Afterburner

The crematory combustion gases vent to a 24 foot Above Ground Level (AGL) stack.

C. Application Classification

The application for WCC 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 currently licensed emission unit only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended).

II. BEST PRACTICAL TREATMENT

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 06-096 CMR 100 (as amended).

BPT for existing 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. Crematory #1

BPT for Crematory #1 is the following:

- Emission Limits

Emissions information is based on a licensed allowed particulate matter emission limit of 0.12 gr/dscf, corrected to 12% CO_2, the burning of propane as an auxiliary fuel, and the use of the following factors:

The BPT emissions from the **propane** portion of the total exhaust were based on the following:

PM/PM_{10}	0.2 lb/1000 gallons, AP-42, Table 1.5-1, dated 7/08
SO_2	0.1 lb/1000 gallons, AP-42, Table 1.5-1, dated 7/08
NO_X	13.0 lb/1000 gallons, AP-42, Table 1.5-1, dated 7/08
CO	7.5 lb/1000 gallons, AP-42, Table 1.5-1, dated 7/08
VOC	1.0 lb/1000 gallons, AP-42, Table 1.5-1, dated 7/08

The BPT emissions from the **biomedical** portion of the total exhaust were based on the following:

PM	0.12 gr/dscf corrected to 12% CO_2, previous BACT analysis (A 1013-71-A-N)
SO_2	2.17 lb/ton, AP-42, Table 2.3-1, dated 7/93
NO_X	3.56 lb/ton, AP-42, Table 2.3-1, dated 7/93
CO	2.95 lb/ton, AP-42, Table 2.3-1, dated 7/93
VOC	0.299 lb/ton, AP-42, Table 2.3-2, dated 7/93

The pound-per-hour BPT emissions for Crematory #1 are as follows:

	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_X (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Propane Burner	0.01	0.01	0.01	0.21	0.12	0.02
Biomedical Remains	0.72	0.72	0.16	0.27	0.22	0.02
Total Emission Limit	0.73	0.73	0.17	0.48	0.34	0.04

Opacity: Visible emissions from the crematory stack shall not exceed 10% opacity based on a six (6) minute block average basis.

- Operating parameters:

  - Operating temperature in the secondary chamber shall be maintained at or above 1600°F for the duration of the burn cycle, with a stack gas retention time, at or above 1600°F, of at least 1.0 second.
  - To ensure an efficient burn, and to prevent odors and visible emissions, the secondary chamber will be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1600°F.
  - No remains shall be introduced into the primary chamber until the temperature in the secondary chamber has reached 1600°F.
  - Once the burn cycle has commenced by introduction of primary chamber combustion, the shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1600°F in the secondary chamber.
  - A pyrometer and 1/4 inch test port shall be installed and maintained at that location of the crematory or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1600°F.

- A log will be maintained recording the weight of the remains, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart.
- The crematory operator(s) shall receive adequate training to operate the crematory in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.

C. Annual Emissions

1. WCC shall be restricted to the following annual emissions, based on calendar year. The tons per year limits were calculated based on Crematory #1 operating 8760 hours per year, firing propane as the auxiliary fuel, with a maximum charge rate of 150 pounds per hour.

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

	PM	PM_{10}	SO_2	NO_x	CO	VOC
Crematory #1	3.2	3.2	0.7	2.1	1.5	0.2
Total TPY	**3.2**	**3.2**	**0.7**	**2.1**	**1.5**	**0.2**

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) means the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Greenhouse gases (GHG) for purposes of licensing are calculated and reported as carbon dioxide equivalents (CO_2 e).

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, WCC is below the major source threshold of 100,000 tons of CO_2e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AIR QUALITY ANALYSIS

According to Chapter 115 of the Department's regulations, the level of air quality analysis and monitoring are determined on a case-by-case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

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

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this above 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-1013-71-B-R, 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 which any emission 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. [06-096 CMR 115]

(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 MRSA §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 control systems required by the air emission license in a manner consistent with good air pollution control practices 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 the 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 is an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary 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; <u>or</u>
   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 the 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 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 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 provision 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 emissions 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 when such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitations. [06-096 CMR 115]

(15) Upon the written request of 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 data. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) **Crematory #1**

A. The crematory shall be used for the disposal of type 4 waste and shall not be used for the disposal of plastics, cytotoxic (antineoplastic) drugs or any radioactive wastes and shall not be used to dispose of any medical waste classified as type 7 waste, as defined in 06-096 CMR 100. [06-096 CMR 115, BPT/BACT]

B. The crematory shall not exceed the unit's maximum design combustion rates. Auxiliary fuel inputs to the primary and secondary chambers shall be propane. Compliance shall be demonstrated through fuel receipts. [06-096 CMR 115, BPT/BACT]

C. The crematory shall not exceed a particulate matter emission limit of 0.12 gr/dscf, corrected to 12% CO_2. Licensed allowed emissions for the crematory shall not exceed the following:

Crematory Emission Limits

	lb/hr
PM	0.73
PM_{10}	0.73
SO_2	0.17
NOx	0.48
CO	0.34
VOC	0.04

Compliance shall be demonstrated through stack testing by request of the Department, in accordance with the appropriate method found in 40 CFR Part 60, Appendix A.

[06-096 CMR 115, BPT/BACT]

D. Visible emissions from the stack of the crematory shall not exceed 10% on a six (6)-minute block average basis. [06-096 CMR 115, BPT/BACT]

E. Operating temperature in the secondary chamber shall be maintained at or above 1600°F, with a stack gas retention time, at or above 1600°F, of at least 1.0 second. [06-096 CMR 115, BPT/BACT]

F. To insure an efficient burn, and to prevent odors and visible emissions, the secondary chamber will be preheated, as specified by the manufacturer, until the pyrometer temperature measures at least 1600°F. [06-096 CMR 115, BPT/BACT]

G. No remains shall be introduced into the primary chamber until the temperature in the secondary chamber has reached 1600°F.

H. Once the burn cycle has commenced by introduction of primary chamber combustion, the crematory shall be operated in an efficient manner, and as specified by the manufacturer, for the period of time between preheat and reaching the set operational temperature to be a minimum of 1600°F in the secondary chamber. The temperature in the secondary chamber shall be maintained at a minimum of 1600°F for the duration of the burn cycle. [06-096 CMR 115, BPT/BACT]

I. A pyrometer and 1/4 inch test port shall be installed and maintained at that location of the crematory or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 1.0 second at a minimum of 1600°F. [06-096 CMR 115, BPT/BACT]

J. A log will be maintained recording the weight of the remains, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged shall be logged on the chart. [06-096 CMR 115, BPT/BACT]

K. The crematory operator(s) shall receive adequate training to operate the crematory in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License. [06-096 CMR 115, BPT/BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 23 DAY OF April, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Patricia W. Aho
PATRICIA W. AHO, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, 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: 02/20/2014
Date of application acceptance: 02/25/2014

Date filed with the Board of Environmental Protection:

Filed
APR 25 2014
State of Maine
Board of Environmental Protection

This Order prepared by N. Lynn Cornfield, Bureau of Air Quality.