



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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ACTING COMMISSIONER

Southern Maine Community College)
Cumberland County) Departmental
South Portland, Maine) Findings of Fact and Order
A-669-71-F-A) Air Emission License
Amendment

After review of the air emissions license amendment 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

Southern Maine Community College (SMCC), located at 2 Fort Road, South Portland, Maine has applied to amend their Air Emission License to include the addition of several new heating boiler units and the removal of formally permitted units that have been removed from the facility. SMCC operates under the conditions and requirements found in Air Emission License A-699-71-E-R/A issued on October 5, 2007.

B. Emission Equipment

Southern Maine Technical College is authorized to operate the following equipment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr or scf/hr)</u>	<u>Fuel Type</u>	<u>Date of Construction</u>	<u>Control Devices</u>	<u>Stack #</u>
Boiler #1	4.38	4380 scf/hr	Natural gas	1982	none	1
Boiler #2	4.03	4030 scf/hr	Natural gas	1964	none	2
Boiler #3	2.24	2240 scf/hr	Natural gas	1981	none	3
Boiler #4	2.67	2730 scf/hr	Natural gas	1969	none	4
Boiler #5	2.67	2730 scf/hr	Natural gas	1969	none	5
Boiler #6	1.01	1010 scf/hr	Natural gas	1987	none	6
Boiler #7	1.28	1280 scf/hr	Natural gas	1990	none	7
Boiler #8	1.59	11.4 gal/hr	#2 Fuel Oil	1985	none	8
Boiler #10	1.62	1620 scf/hr	Natural gas	1973	none	10
Boiler #12	2.54	2490 scf/hr	Natural gas	2007	none	12
Boiler #13	2.54	2490 scf/hr	Natural gas	2007	none	13

* Denotes new equipment

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C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the “Significant Emission Levels” as given in Maine’s Air Regulations. The expected emissions increases from the addition of the new heating boilers do not exceed the “Significant Emission Levels”, therefore, this modification is determined to be a minor modification and has been processed as such.

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 new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boiler Units

SMCC’s current Air Emission License (A-669-71-E-R/A) allows for the operation of 13 heating boiler units at their South Portland campus. Boilers #1, #2, #3, #4, #5, #6, #7, #9, #10, #11, #12 and #13 are all natural gas fired boilers with maximum design heat input capacities ranging from 1.01 MMBtu/hr to 4.38 MMBtu/hr. Boiler #8 is a #2 fuel oil firing boiler with a heat input capacity of 1.59 MMBtu/hr. SMCC made energy improvements to their building heating systems in 2010 which included the replacement of Boilers #4 and #5 and the removal of Boilers #9 and #11.

Boilers #4 and #5 were replaced with two Buderus Logano GE 615 boilers with rated heat input capacities of 2.67 MMBtu/hr each. These units are restricted to operating no greater than 65% of their rated capacity due to insufficient stack size to accommodate operation at full capacity.

Boiler #9, formally located in the Automotive Technologies building, has been removed and replaced with a unit with a rated heat input capacity of less than 1 MMBtu/hr. The new unit is only used for classroom heating and the automotive shop bays are now heated with passive solar and infrared heating systems.

Boiler #11, formally located in the Rotunda has been removed from the campus as the Rotunda was demolished in 2010.

A summary of the BACT analysis for the new Buderus Logan units (Boilers #4 and #5) is as follows:

1. PM emissions are regulated by 06-096 CMR 103, however, the PM emission limit of 0.05 lb/MMBtu when firing natural gas is more stringent and shall be considered BACT. PM₁₀ emission limits are derived from PM limits.
2. SO₂, NO_x, CO and VOC emission limits for natural gas fired boilers are based upon AP-42 data dated 7/98.
3. Visible emissions from each stack are regulated by 06-096 CMR 101. Visible emissions from each stack shall not exceed 10% opacity on a six-minute block average except, for no more than 2 six-minute block averages in a 3-hour period.

C. 40 CFR Part 63 Subpart JJJJJ for Boiler #8

Boiler #8 is subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). Boiler #8 which has a rated heat input capacity of 1.59 MMBtu/hr firing #2 fuel oil is considered a small boiler as defined in 40 CFR Part 60 Subpart JJJJJ. As the boiler is subcategorized as a small boiler, it is subject to the rule, however, Boiler #8 is not subject to the PM, CO, or mercury emission limits from 40 CFR Part 63 Subpart JJJJJ. As Boiler #8 is not subject to PM, CO, or mercury emission limits, compliance with 40 CFR Part 63 Subpart JJJJJ is required by no later than March 21, 2012.

For informational purposes, a summary of the applicable federal 40 CFR Part 63 Subpart JJJJJ requirements are 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 SMCC is still subject to the requirements. The following list includes, but is not limited to, requirements established in 40 CFR Part 63 Subpart JJJJJ:

a. Compliance Dates and Work Practice Requirements

1. Initial Notification of Compliance

In accordance with 40 CFR Part 63.11225(a)(2), SMCC must submit to EPA an Initial Notification of Applicability no later than September 17, 2011 stating that Boiler #8 at the SMCC facility is subject to Subpart JJJJJ. Example notification forms can be found at the following website: <http://www.epa.gov/ttn/atw/boiler/boilerpg.html> under "Implementation Tools".

2. UTC shall implement a boiler tune-up program for Boilers #8 which shall include, but not be limited to, the following:

- i. As established in 40 CFR Part 63.11196(a)(1), SMCC shall conduct an initial boiler tune-up for Boiler #8 no later than March 21, 2012. The tune-up shall be conducted in accordance with the tune-up parameters established in 40 CFR Part 63.11223(b)(1) through (7).
- ii. In accordance with 40 CFR Part 63.11225(a)(4)(i), no later than July 19, 2012, SMCC shall submit an Initial Notice of Compliance demonstrating compliance with the requirement of an initial tune-up of Boiler #8.
- iii. Following the initial tune-up, SMCC shall undertake biennial boiler tune-ups for Boiler #8. In accordance with 40 CFR Part 63.11223(a), biennial tune-ups shall be conducted no greater than 25 months after the previous tune-up and shall be conducted in accordance with the tune-up parameters established in 40 CFR Part 63.11223(b)(1) through (7).
- iv. In accordance with 40 CFR Part 63.11225(a)(4)(i), no later than July 19, 2012, SMCC shall submit an Initial Notice of Compliance demonstrating compliance with the requirement of an initial tune-up of Boiler #8. In accordance with 40 CFR Part 63.11225(a)(4), no later than 120 days following the required biennial tune-up, SMCC shall submit a Notice of Compliance Status demonstrating compliance with the requirement of the Boiler #8 tune-up.

As required by 40 CFR Part 63.11223(b)(7), 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.

b. Record Keeping

- i. In accordance with 40 CFR Part 63.11225(b), SMCC must prepare biennially and submit to the delegated Authority upon request a biennial compliance certification report for the previous two calendar years which shall include the required information established in 40 CFR Part 63.11225(b)(1) through (4).
- ii. In accordance with 40 CFR Part 63.11225(c), SMCC must maintain records which shall include the required information established in 40 CFR Part 63.11225(c)(1) through (7). In accordance with 40 CFR Part 63.11225(c), records shall be in a form suitable and readily available for expeditious review and maintained for 5 years.

D. Annual Emission Restrictions

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

- Total annual facility natural gas use shall not exceed 50,000,000 standard cubic feet (scf) per year.
- Total annual facility #2 fuel oil use shall not exceed 50,000 gallons per year with a maximum sulfur content of 0.35% by weight.

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

<u>Pollutant</u>	<u>Tons/Year</u>		
	Boiler #8	Natural Gas Fired Boilers	Total
PM	0.3	1.3	1.6
PM ₁₀	0.3	1.3	1.6
SO ₂	1.2	0.02	1.2
NO _x	0.5	2.5	3.0
CO	0.1	2.1	2.2
VOC	0.01	0.1	0.1

III. AMBIENT AIR QUALITY ANALYSIS

According to 06-096 CMR 115, 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, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source. Based on the total facility emissions, SMCC is below the emissions level required for modeling and monitoring.

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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-669-71-F-A, 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.

SPECIFIC CONDITIONS

The following condition shall replace Condition (16) in Air Emission License A-699-71-E-R/A

(16) Natural Gas Boiler Units

A. Emissions from the natural gas fired boilers shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	lb/MMBtu	0.05	-	-	-	-	-
	lb/hr	0.22	0.22	neg.	0.44	0.37	0.02
Boiler #2	lb/MMBtu	0.05	-	-	-	-	-
	lb/hr	0.20	0.20	neg.	0.40	0.34	0.02
Boiler #3	lb/hr	0.11	0.11	neg.	0.22	0.18	0.01
Boiler #4	lb/hr	0.13	0.13	neg.	0.26	0.22	0.014
Boiler #5	lb/hr	0.13	0.13	neg.	0.26	0.22	0.014
Boiler #6	lb/hr	0.05	0.05	neg.	0.10	0.08	0.006
Boiler #7	lb/hr	0.06	0.06	neg.	0.13	0.12	0.007
Boiler #10	lb/hr	0.08	0.08	neg.	0.16	0.14	0.009
Boiler #12	lb/hr	0.13	0.13	neg.	0.25	0.14	0.014
Boiler #13	lb/hr	0.13	0.13	neg.	0.25	0.13	0.014

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- B. Southern Maine Technical College shall not exceed a total annual facility natural gas usage of 50,000,000 scf of natural gas based on a 12-month rolling total.
- C. Fuel use records shall be maintained on a monthly basis, in addition to the 12-month rolling total.
- D. Visible emissions from each stack shall not exceed 10% opacity on a six-minute block average except, for no more than 1 six-minute block averages in a 3-hour period.

DONE AND DATED IN AUGUSTA, MAINE THIS 22nd DAY OF September 2011

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Malanne L. G. for
PATRICIA W. AHO, ACTING COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

This Amendment shall expire concurrently with Air Emission License A-669-71-E-R/A.

Date of initial receipt of application: November 24, 2010

Date of application acceptance: November 30, 2010

Date filed with the Board of Environmental Protection: _____

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

