



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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McCain Foods USA, Inc.
Aroostook County
Easton, Maine
A-436-77-5-A

Departmental
Findings of Fact and Order
New Source Review
NSR #5

FINDINGS OF FACT

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 Maine Revised Statutes Annotated (M.R.S.A.), Section 344 and Section 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	McCain Foods USA, Inc. (McCain)
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	311411
NATURE OF BUSINESS	Frozen Potato Products
FACILITY LOCATION	Richardson Rd, Easton, Maine

B. Amendment Description

McCain Foods USA, Inc. (McCain) of Easton, Maine is licensed to operate emission sources associated with their potato processing facility. The facility is located off Richardson Road in Easton, Maine on approximately nine acres of property. This minor modification addresses the following changes to the facility's license:

1. Removal of #6 fuel oil from the fuel mix for Boilers #5, #8, and #9;
2. Deletion/modification of license requirements associated with the removal of #6 fuel oil; and
3. Modification of license requirements to calculate emissions increases from the previously licensed Digester project.

C. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers & Flare

Equipment	Maximum Heat Input Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Manufacture Date	Stack #
Boiler #5	98.5	704 gal/hr 96,568 scf/hr	distillate fuel, 0.5% spec. waste oil, 0.5% vegetable oil natural gas	1998	5
Boiler #8	49.5 37.8 (biogas)	354 gal/hr 48,529 scf/hr 60,000 scf/hr	distillate fuel, 0.5% spec. waste oil, 0.5% vegetable oil natural gas biogas	2005	17
Boiler #9	49.5 37.8 (biogas)	354 gal/hr 48,529 scf/hr 60,000 scf/hr	distillate fuel, 0.5% spec. waste oil, 0.5% vegetable oil natural gas biogas	2005	18
Sludge Heater	2.7	29.1 gal/hr 4,222 scf/hr	propane biogas	2012	20
Biogas Flare	26.5	0.6 gal/hr 42,000 scf/hr	propane biogas	1998	N/A

D. Definitions

Distillate Fuel means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396, diesel fuel oil numbers 1 or 2, as defined in ASTM D975, kerosene, as defined in ASTM D3699, biodiesel as defined in ASTM D6751, or biodiesel blends as defined in ASTM D7467.

E. Application Classification

The application for McCain does not violate any applicable federal or state requirements. This application does seek to modify a Best Available Control Technology (BACT) analysis performed per New Source Review.

The modification of a major source is considered a major modification based on whether or not expected emissions increases exceed the “Significant Emission Increase Levels” as given in *Definitions Regulation*, 06-096 Code of Maine Rules (CMR) 100 (as amended).

The proposed license modification will not increase the facility’s emission limits. Therefore, this amendment is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended) since the changes being made are not addressed or prohibited in the Part 70 air emission license. The requirements of this license will be incorporated into the facility’s pending Part 70 air emission license renewal.

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 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boilers #5, #8 & #9

Boilers #5, #8, and #9 are currently licensed to fire a wide range of fuels including #6 fuel oil, distillate fuel, natural gas, specification waste oil, and vegetable oil. In addition, Boilers #8 and #9 are licensed to fire biogas produced on-site.

McCain has discontinued the use of #6 fuel oil and has no plans to fire this fuel again in the future. The associated residual oil tanks have been dismantled and removed from the site. Therefore, McCain has requested the removal of this fuel from their license as well as any requirements associated with the firing of #6 fuel oil.

1. Emission Limits

Boilers #5, #8 and #9 fire primarily natural gas and (for Boilers #8 and #9) biogas. Distillate fuel is utilized as a back-up fuel. Emission limits for when

the boilers are firing only natural gas are addressed in NSR amendment A-436-77-3-M. No changes are proposed to these limits.

The current emission limits associated with the firing of fuels other than natural gas were based on the firing of #6 fuel oil in conjunction with other fuels. Therefore, McCain has requested that the emission limits for the firing of fuels other than natural gas be reevaluated.

The new BACT emission limits for Boiler #5 (firing fuels other than natural gas) were based on the following:

Any Combination of Fuels

- PM/PM₁₀ – 0.08 lb/MMBtu based on 06-096 CMR 103
- SO₂ – based on firing fuel oil with a maximum sulfur content of 0.5% by weight
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 0.0823 lb/MMBtu based on 06-096 115, BACT
- VOC – 0.84 lb/hr based on 06-096 CMR 115, BACT
- Opacity – 40 CFR Part 60, Subpart Dc

The new BACT emission limits for Boilers #8 and #9 (firing fuels other than natural gas) were based on the following:

Any Combination of Fuels

- PM/PM₁₀ – 0.08 lb/MMBtu based on 06-096 CMR 103
- SO₂ – 48.9 lb/hr based on 06-096 CMR 115, BACT
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 0.0823 lb/MMBtu based on 06-096 115, BACT
- VOC – 0.40 lb/hr based on 06-096 CMR 115, BACT
- Opacity – 40 CFR Part 60, Subpart Dc

The BACT emission limits for the boilers (firing fuels other than natural gas) are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/MMBtu)</u>	<u>NO_x</u> <u>(lb/MMBtu)</u>
Boiler #5	0.08	0.14
Boiler #8	0.08	0.14
Boiler #9	0.08	0.14

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #5	7.9	7.9	51.2	14.1	8.1	0.84
Boiler #8	4.0	4.0	48.9	7.1	4.1	0.4
Boiler #9	4.0	4.0	48.9	7.1	4.1	0.4

The emission limits for PM, PM₁₀, SO₂, and VOC represent no change from the currently licensed emission limits. Therefore, only the emission limits for NO_x and CO are addressed in the Order section of this amendment.

2. COMS

Boilers #5, #8, and #9 are subject to the New Source Performance Standards (NSPS) titled *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc. Boilers that fire only distillate fuel with a sulfur content limit of 0.5% or less by weight and/or liquid or gaseous fuels with potential SO₂ emissions of 0.060 lb/MMBtu or less and that do not use post-combustion controls are exempt from the requirement to operate a Continuous Opacity Monitoring System (COMS) per 40 CFR Part 60, §60.47c(c). Biogas is not intended as a fuel subject to the requirements specified in Subpart Dc because it is not derived from natural gas, petroleum, or coal. All other fuels fired in the boilers meet the requirements of this exemption. Therefore, with the removal of #6 fuel oil Boilers #5, #8, #9 are no longer required to operate and maintain COMS on the exhausts to these units.

The boilers are still subject to the opacity requirements of 40 CFR Part 60, Subpart Dc and compliance shall be demonstrated per 40 CFR Part 60, Appendix A, Method 9 upon request by the Department.

C. Emissions from Digester Project

The Digester project was addressed in NSR amendment A-436-77-2-A. In order to be classified as a minor modification, McCain took a limit on actual facility-wide emissions increases from this project and must demonstrate that emissions as a result of the Digester project do not exceed the following in any 12-month period until after January 2022:

Pollutant	Tons/year
PM	24.9
PM ₁₀	14.9
PM _{2.5}	9.9
SO ₂	39.9
NO _x	39.9
CO	99.9
VOC	39.9
CO ₂ e	74900

Emissions increases from the Digester project include combustion emissions from biogas produced in the Digester.

Based on the maximum biogas output of the Digester and the short-term emissions limitations on the equipment the biogas is fired in, it is not physically possible for McCain to exceed the emissions listed above for the Digester project for any pollutant except for SO₂. Therefore, McCain shall only be required to maintain records of the 12-month rolling total SO₂ emissions from the Digester project.

D. Incorporation into the Part 70 Air Emission License

The requirements in this 06-096 CMR 115 New Source Review amendment shall apply to the facility upon amendment issuance. Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must then apply for an amendment to the Part 70 license within one year of commencing the proposed operations as provided in 40 CFR Part 70.5. The requirements of this NSR amendment shall be incorporated into the facility's pending Part 70 renewal.

E. Annual Emissions

1. Total Annual Emissions

McCain is licensed for the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on the following:

- Firing Boiler #5 for 8760 hr/year on oil.
- Firing Boilers #8 and #9 for 8760 hr/year on oil.
- Facility-wide emissions of SO₂ from the combustion of biogas are calculated based on a maximum production of 320 million dscf/year from both the digester and treatment plant combined.
- Firing the Sludge Heater for 8760 hr/year on biogas.
- Flaring up to 240 million cubic feet of biogas per year.
- Operating each of the dryers and fryers for 8760 hr/year.
- Operating the Fire Pump Engine and Emergency Generator for 100 hr/year (each)

Total Licensed Annual Emissions for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boiler #5	34.5	34.5	224.3	61.6	35.5	3.7
Boiler #8	17.3	17.3	110.0	31.0	17.8	1.9
Boiler #9	17.3	17.3	110.0	31.0	17.8	1.9
Sludge Heater	0.6	0.6	–	1.7	1.0	0.1
Biogas SO ₂	–	–	111.9	–	–	–
Biogas Flare	0.9	0.9	–	12.0	10.1	0.7
Prime 1 Dryer	16.6	16.6	–	–	–	–
Prime 2 Dryer	24.5	24.5	–	–	–	–
Prime 1 Fryer	12.7	12.7	–	–	–	–
Specialty Fryer	25.0	25.0	–	–	–	–
Prime 2 Fryer	26.3	26.3	–	–	–	–
Fire Pump Engine	–	–	–	0.2	0.1	–
Emergency Generator	–	–	–	0.4	0.1	–
Total TPY	175.7	175.7	556.2	136.2	82.4	8.3

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

The SO₂ numbers listed above are used to calculate the maximum emissions from the facility as a whole and do not necessarily represent the maximum SO₂ emissions from individual pieces of equipment. Maximum emissions of SO₂ from individual equipment are as follows:

Equipment	Max. SO ₂ Tons/year
Boiler #5	224.3
Boiler #8	170.8
Boiler #9	170.8
Sludge Heater	13.1
Biogas Flare	83.8

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).

The quantity of CO₂e emissions from this facility is greater than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

As defined in 06-096 CMR 100, any source emitting 100,000 tons/year or more of CO₂e is a major source for GHG. This license includes applicable requirements addressing GHG emissions from this source, as appropriate.

III. AMBIENT AIR QUALITY ANALYSIS

McCain previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this amendment.

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-436-77-5-A pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the specific conditions below.

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.

SPECIFIC CONDITIONS

All conditions pertaining to the firing of #6 fuel oil in Boilers #5, #8 and #9, as well as any associated emission limits and recordkeeping of #6 fuel oil usage and sulfur content, are Deleted including the following:

- Air Emission License A-436-71-D-A Conditions (16)(A), (16)(B), and (16)(D)(3); and
- Air Emission License A-436-70-B-A Conditions (35)(A), (35)(B), and (35)(E)(6).

All conditions pertaining to NO_x and CO emission limits for Boilers #5, #8, and #9 when firing fuel oil are Deleted including the following:

- Air Emission License A-436-71-D-A Conditions (16)(C)(4) and (5); and
- Air Emission License A-436-70-B-A Conditions (35)(D)(4) and (5).

All conditions pertaining to the installation, operation, and maintenance of COMS for Boilers #5, #8, and #9 are Deleted including the following:

- Air Emission License A-436-71-D-A Conditions (16)(D)(4), (16)(E), and (16)(F); and
- Air Emission License A-436-70-B-A Conditions (35)(E)(2), (35)(E)(5), (35)(F), and (35)(G).

The following shall replace Condition (3) of Air Emission License A-436-77-2-A:

(3) **Digester**

- A. As a result of the digester project, McCain shall not exceed the following actual emissions increases on a 12-month rolling total basis until after January 2022:

Pollutant	Tons/year
SO ₂	39.9

[06-096 CMR 115, BACT]

- B. Emissions increases from the Digester project shall include combustion emissions from biogas produced in the Digester. [06-096 CMR 115, BACT]
- C. Compliance with the annual limit above shall be demonstrated on a 12-month rolling total basis by taking the total amount of biogas produced by the Digester and assuming all H₂S in the biogas is converted to SO₂ upon combustion. [06-096 CMR 115, BACT]
- D. McCain shall meter each source of biogas (the Digester and waste water treatment plant lagoon) separately as well as meter each boiler and the Sludge Heater individually for biogas use. The amount of biogas flared shall be calculated by subtracting the boiler and Sludge Heater usage from the total biogas generated. [06-096 CMR 115, BACT]

The following are New Conditions:

- (1) Boilers #8 & #9 are licensed to fire biogas produced on-site.
[06-096 CMR 115, BACT]
- (2) When firing any fuel other than natural gas, visible emissions from Boilers #8 & #9 shall each not exceed 20% opacity on a six (6) minute block average basis, except for one (1) six (6) minute period per hour of not more than 27% opacity.
[40 CFR 60.42c(c)]

(3) Emissions from Boiler #5 shall not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
NO _x	0.14	06-096 CMR 115, BACT	Federally Enforceable

Pollutant	lb/hr	Origin and Authority	Enforceability
NO _x	14.1	06-096 CMR 115, BACT	Federally Enforceable
CO	8.1	06-096 CMR 115, BACT	Federally Enforceable

(4) Emissions from Boilers #8 & #9 shall each not exceed the following limits:

Pollutant	lb/MMBtu	Origin and Authority	Enforceability
NO _x	0.14	06-096 CMR 115, BACT	Federally Enforceable

Pollutant	lb/hr	Origin and Authority	Enforceability
NO _x	7.1	06-096 CMR 115, BACT	Federally Enforceable
CO	4.1	06-096 CMR 115, BACT	Federally Enforceable

DONE AND DATED IN AUGUSTA, MAINE THIS 24 DAY OF April, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Maureen Robert Cove for
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 3/23/15

Date of application acceptance: 3/23/15

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

