

## **Statement of Basis**

**Permit to Construct No. P-2007.0205  
Project ID 61208**

**Idaho Milk Products, Inc.  
Jerome, Idaho**

**Facility ID 053-00014**

**Final**

**June 19, 2013  
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Permit Writer**



The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

|                   |  |
|-------------------|--|
| acfm              | actual cubic feet per minute   |
| ASTM              | American Society for Testing and Materials   |
| CAA               | Clean Air Act  |
| CFR               | Code of Federal Regulations  |
| CI                | compression ignition   |
| CO                | carbon monoxide  |
| CO <sub>2</sub>   | carbon dioxide   |
| CO <sub>2</sub> e | CO <sub>2</sub> equivalent emissions   |
| DEQ               | Department of Environmental Quality  |
| dscf              | dry standard cubic feet  |
| EPA               | U.S. Environmental Protection Agency   |
| GHG               | greenhouse gases   |
| gph               | gallons per hour   |
| gr                | grains (1 lb = 7,000 grains)   |
| HAP               | hazardous air pollutants   |
| HP                | horsepower   |
| hr/yr             | hours per consecutive 12-calendar-month period   |
| ICE               | internal combustion engine   |
| IDAPA             | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| ID No.            | equipment identification number  |
| lb/day            | pounds per calendar day  |
| lb/hr             | pounds per hour  |
| MACT              | Maximum Achievable Control Technology  |
| MMBtu             | million British thermal units  |
| MPC               | milk protein concentrate   |
| NAAQS             | National Ambient Air Quality Standards   |
| NESHAP            | National Emission Standards for Hazardous Air Pollutants   |
| No.               | number   |
| NO <sub>2</sub>   | nitrogen dioxide   |
| NO <sub>x</sub>   | nitrogen oxides  |
| NSPS              | New Source Performance Standards   |
| PM                | particulate matter   |
| PM <sub>2.5</sub> | particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers                                      |
| PM <sub>10</sub>  | particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers                                       |
| ppm               | parts per million  |
| PSD               | Prevention of Significant Deterioration  |
| PTC               | permit to construct  |
| <i>Rules</i>      | <i>Rules for the Control of Air Pollution in Idaho</i>   |
| scf               | standard cubic feet  |
| SIC               | Standard Industrial Classification   |
| SIP               | State Implementation Plan  |
| SM                | synthetic minor  |
| SO <sub>2</sub>   | sulfur dioxide   |
| SO <sub>x</sub>   | sulfur oxides  |
| TAP               | toxic air pollutants   |
| T/day             | tons per calendar day  |
| T/yr              | tons per consecutive 12-calendar-month period  |
| UTM               | Universal Transverse Mercator  |
| VOC               | volatile organic compound  |

## **FACILITY INFORMATION**

### ***Description***

Idaho Milk Products, Inc. operates a milk processing plant at 2249 South Tiger Drive in Jerome, Idaho. The plant receives up to 3 million pounds per day (lb/day) of raw milk by tanker truck. The facility produces sweet cream, skim milk, MPC (dried protein powder), and permeate powder (dried lactose) from raw milk.

Milk is processed in two natural gas fired dryers to prepare dry products. Air blown through the dryers flows through multiple particulate capturing devices (including cyclones, baghouses, and/or a scrubber) to recover product powder and reduce particulate emissions. Dried products from the dryers pass through a fluid-bed, then to packaging. There are two boilers at the facility that combust natural gas to produce steam for heat processes at the plant. An emergency generator supplies backup power in the case of an interruption in the main power supply.

### **Unloading**

Up to 3 million pounds per day of raw dairy milk is unloaded from tanker trucks at the plant. There are no point source air emissions identified for this process operation.

### **Skimming/Separation/Pasteurization**

Raw milk is heated and separated into skim milk and sweet cream. The skim milk is pasteurized, cooled, and sent to storage. The sweet cream is pasteurized, cooled, and sent to storage to await loadout. There are no point source air emissions identified for this process operation.

### **Skim Component Processing**

The Skim component is pumped to the Ultra-Filtration Membrane (UF) unit, which separates the protein fraction of the milk from the lactose / ash fraction. This step also incorporates water into the process to dilute the protein fraction and re-filter it (dia-filtration) to flush more lactose and ash away from the protein resulting in a higher concentration of protein.

- The protein fraction (MPC) is then pumped to holding tanks to await further processing.
- The lactose / ash fraction (permeate) is pumped to the balance tank of the Reverse Osmosis (RO) system. The RO system concentrates the lactose and ash by removing water only. The water is pumped to the "Polisher" balance tank, while the permeate is pumped to the balance tank of the permeate evaporator for further concentration.

The MPC is pumped to the Ultra-Osmosis (UO) unit, another membrane unit that removes water as well as ash from the protein fraction, further concentrating the MPC for optimal drying. The MPC is heated to approximately 130°F prior to entering the UO. The UO Concentrate is then pumped to the balance tank of the MPC dryer. The permeate fraction of the UO process is pumped back to the RO system to recover water and permeate solids.

### **Skim / MPC Dry Product Process**

The concentrated skim or MPC is pumped from the dryer balance tank, through a strainer, and is pumped into the main dryer body (P101), using a high-pressure pump. Air used in drying passes over a Maxon Cross-Fire natural gas fired burner and enters the dryer through the top of the main chamber. Air is exhausted through four ports to four cyclone collectors. Powder collected in the cyclones is conveyed to the fluid-bed. Air from the cyclones is exhausted into two baghouse collectors (P101A and P101B). Powder collected in the dryer baghouses is also conveyed to the fluid-bed. Air from the fluid-bed is exhausted into a baghouse (P102) and powder collected in this baghouse is conveyed to the fluid-bed. Exhaust from the fluid-bed baghouse is discharged to the atmosphere. The powder product is conveyed to a sifter and then to storage silos.

### Permeate Dry Product Process

Concentrated permeate is received into the evaporator balance tank from the RO unit. Permeate is then heated and pasteurized prior to entering the evaporator. The evaporator is a multi-pass Mechanical Vapor Recompression (MVR) unit with a Thermal Vapor Recompression (TVR) finisher. Upon exiting the finisher, the concentrated permeate passes through a "flash cooler" where the temperature is lowered for delivery to one of four crystallizer tanks. The concentrated permeate is slowly cooled in the crystallizer. The process allows the lactose in the concentrate to form crystals and bind the ash to allow a more "fluid" product that dries easier. The crystallized permeate is pumped from a crystallizer tank and is preheated. The heated concentrate is then strained and pumped into the main body of the dryer using a high-pressure pump. The dried permeate is discharged onto a lactose conversion belt and fluid bed re-dryer / cooler. The powder is conveyed pneumatically to a sifter, and then to one of two permeate storage silos. The powder receiving area has one baghouse (P105) with exhaust that is discharged to the atmosphere. Air used in drying, passes over a Maxon Cross-Fire natural gas fired burner and enters the dryer through the top of the main chamber. Air is exhausted through two ports to two cyclone collectors. Powder from the cyclones drops into the fluid-bed, while the air then enters a sanitary scrubber (P103) prior to discharge to the atmosphere. Powder collected in the fluid-bed baghouse is conveyed back to the fluid-bed and the exhaust from the fluid-bed baghouse (P104) is discharged to the atmosphere.

### Packaging

Powder is conveyed from one of four silos to either a bag filler or to a tote filler. The powder silos are equipped with a baghouse filtering system and the air used in conveying is discharged back into the plant environment.

### Utilities

Two natural gas boilers (P106 and P107) provide steam for a variety of heat processes at the facility. The boilers are sized to be fully redundant.

An emergency generator (P108) provides backup power in the event of a power outage. The emergency generator combusts diesel fuel.

### **Permitting History**

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

**Table 1 Summary of Permitting History**

| Issue Date     | Permit Number          | Project  | Status | History Explanation |
|----------------|------------------------|--|--------|---------------------|
| March 20, 2008 | P-2007.0205            | Initial Permit to Construct a milk processing plant. | S      | Initial PTC         |
| June 19, 2013  | P-2007.0205 PROJ 61208 | Revised PTC to increase MPC powder production.       | A      | Revised PTC         |

### **Application Scope**

This PTC is a revision of an existing PTC. The applicant has proposed to:

- Increase MPC powder production, resulting in no facility-wide emissions increase.

### **Application Chronology**

May 13 – 14, 2013 DEQ received an application and an application fee.

May 20 – June 4, 2013 DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.

June 5, 2013 DEQ made available the draft permit and statement of basis for peer and regional office review.

June 7, 2013 DEQ determined that the application was complete.  
 June 7, 2013 DEQ made available the draft permit and statement of basis for applicant review.  
 June 17, 2013 DEQ received the permit processing fee.  
 June 19, 2013 DEQ issued the final permit and statement of basis.

**TECHNICAL ANALYSIS**

***Emissions Units and Control Equipment***

**Table 2 Summary of Regulated Sources**

| Source Description (ID No.)  | Emission Control Devices  |
|--|---|
| <p><b><u>MPC / Skim Milk Dryer (P101)</u></b><br/>           Dryer Manufacturer: C.E. Rogers<br/>           Burner Manufacturer: Maxon<br/>           Model: Crossfire Line Burner<br/>           Maximum Production: 5,745 lb/hr dry solids (MPC)<br/>                                             13,027 lb/hr dry solids (Skim Milk)<br/>           Maximum Operation: 8,760 hr/yr<br/>           Maximum Capacity: 40.0 MMBtu/hr<br/>           Fuel: Natural Gas<br/>           Fuel Consumption: 39,216 scf/hr</p> | <p><b><u>MPC / Skim Milk Dryer Baghouse (P101A)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Model: CER-400</p> <p><b><u>MPC / Skim Milk Dryer Baghouse (P101B)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Model: CER-400</p> |
| <p><b><u>MPC / Skim Milk Fluid Bed (P102)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Maximum Production: 5,738 lb/hr dry solids (MPC)<br/>                                             13,020 lb/hr dry solids (Skim Milk)<br/>           Maximum Operation: 8,760 hr/yr</p>  | <p><b><u>MPC / Skim Milk Fluid Bed Baghouse (P102)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Model: CER-78</p>  |
| <p><b><u>Permeate Dryer (P103)</u></b><br/>           Dryer Manufacturer: C.E. Rogers<br/>           Burner Manufacturer: Maxon<br/>           Model: Crossfire Line Burner<br/>           Maximum Production: 8,850 lb/hr dry solids (Permeate)<br/>           Maximum Operation: 8,760 hr/yr<br/>           Maximum Capacity: 12.0 MMBtu/hr<br/>           Fuel: Natural Gas<br/>           Fuel Consumption: 11,765 scf/hr</p>  | <p><b><u>Permeate Dryer Scrubber (P103)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Model: CER-WSS</p>  |
| <p><b><u>Permeate Fluid Bed (P104)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Maximum Production: 9,924 lb/hr dry solids (Permeate)<br/>           Maximum Operation: 8,760 hr/yr</p>   | <p><b><u>Permeate Fluid Bed Baghouse (P104)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Model: CER-216</p>  |
| <p><b><u>Permeate Powder Receiver (P105)</u></b><br/>           Manufacturer: C.E. Rogers<br/>           Maximum Production: 8,824 lb/hr dry solids (Permeate)<br/>           Maximum Operation: 8,760 hr/yr</p>   | <p><b><u>Permeate Powder Receiving Baghouse (P105)</u></b><br/>           Manufacturer: Nu-Con<br/>           Model: NCRD 84-21-3T</p>  |

|                                   |                           |      |
|-----------------------------------|---------------------------|------|
| <b>Boiler #1 (P106)</b>           |                           | None |
| Manufacturer:                     | Superior Boiler Works     |      |
| Model:                            | Super Seminole 4000       |      |
| Maximum Operation:                | 8,760 hr/yr               |      |
| Maximum Capacity:                 | 33.48 MMBtu/hr            |      |
| Fuel:                             | Natural Gas               |      |
| Fuel Consumption:                 | 32,819 scf/hr             |      |
| <b>Boiler #2 (P107)</b>           |                           | None |
| Manufacturer:                     | Superior Boiler Works     |      |
| Model:                            | Super Seminole 4000       |      |
| Maximum Operation:                | 8,760 hr/yr               |      |
| Maximum Capacity:                 | 33.48 MMBtu/hr            |      |
| Fuel:                             | Natural Gas               |      |
| Fuel Consumption:                 | 32,819 scf/hr             |      |
| <b>Emergency Generator (P108)</b> |                           | None |
| Manufacturer:                     | Cummins                   |      |
| Model:                            | QST30-G5 NR2              |      |
| Maximum Operation:                | 100 hr/yr (non-emergency) |      |
| Maximum Capacity:                 | 1490 HP                   |      |
| Fuel:                             | Diesel                    |      |
| Fuel Consumption:                 | 72.2 gph                  |      |
| Displacement:                     | 2.5 liters/cylinder       |      |

### Emission Inventories

Detailed facility-wide emissions inventories, including the emissions of federally-regulated criteria pollutants, hazardous air pollutants (HAP), and state-regulated toxic air pollutants (TAP), were provided in the initial PTC application.<sup>1</sup> The facility-wide potential to emit criteria pollutants and greenhouse gases is summarized in Table 3, and the facility-wide potential to emit hazardous air pollutants is summarized in Table 4.

**Table 3 Potential to Emit Criteria Pollutants<sup>1</sup>**

| Emissions Unit                          | PM <sub>10</sub> |              | SO <sub>2</sub> |             | NO <sub>x</sub> |              | CO           |              | VOC         |             | Lead                            | GHG CO <sub>2</sub> e |
|---|------------------|--------------|-----------------|-------------|-----------------|--------------|--------------|--------------|-------------|-------------|---------------------------------|-----------------------|
|   | lb/hr            | T/yr         | lb/hr           | T/yr        | lb/hr           | T/yr         | lb/hr        | T/yr         | lb/hr       | T/yr        | lb/hr<br>(quarterly<br>average) | T/yr                  |
| Skim Milk Dryer (P101)                  | 7.90             | 34.60        | 0.02            | 0.10        | 1.60            | 6.80         | 12.53        | 54.90        | 0.22        | 0.94        | 1.96E-05                        | 20,738                |
| Skim Milk Fluid Bed (P102)              | 0.78             | 3.42         |                 |             |                 |              |              |              |             |             |                                 |                       |
| Permeate Dryer (P103)                   | 7.01             | 30.68        | 0.01            | 0.03        | 0.50            | 2.03         | 3.76         | 16.47        | 0.06        | 0.30        | 5.88E-06                        | 6,222                 |
| Permeate Fluid Bed (P104)               | 1.97             | 8.60         |                 |             |                 |              |              |              |             |             |                                 |                       |
| Permeate Powder Receiver (P105)         | 0.05             | 0.20         |                 |             |                 |              |              |              |             |             |                                 |                       |
| Boiler #1 (P106)                        | 0.25             | 1.10         | 0.02            | 0.10        | 3.28            | 14.40        | 2.76         | 12.10        | 0.18        | 0.80        | 1.64E-05                        | 17,355                |
| Boiler #2 (P107)                        | 0.25             |              | 0.02            |             | 3.28            |              | 2.76         |              | 0.18        |             | 1.64E-05                        |                       |
| Emergency Generator (P108) <sup>2</sup> | 0.62             | 0.00         | 0.51            | 0.03        | 17.08           | 0.85         | 2.17         | 0.11         | 0.23        | 0.01        |                                 | 81                    |
| <b>Total, Point Sources</b>             | <b>18.83</b>     | <b>78.60</b> | <b>0.58</b>     | <b>0.26</b> | <b>25.75</b>    | <b>24.08</b> | <b>23.98</b> | <b>83.58</b> | <b>0.87</b> | <b>2.05</b> | <b>5.83E-05</b>                 | <b>61,751</b>         |

- 1) Assumes the use of MPC / Skim Milk process cyclones and Permeate process cyclones as process equipment
- 2) The T/yr emission rates of all pollutants from the emergency generator were based on 100 hr/yr operation for maintenance checks and readiness testing. The SO<sub>2</sub> emission rates from the emergency generator were based on the maximum allowed sulfur content for NR diesel fuel of 500 ppm.

<sup>1</sup> "Pre-Permit Construction Approval and Permit to Construct Application," Idaho Milk Products, November 6, 2007 (2008AAG539-553).

**Table 4 Potential to Emit Hazardous Air Pollutants**

| HAP             | T/yr            |
|-----------------|-----------------|
| Acetaldehyde    | 1.16E-05        |
| Acrolein        | 3.64E-06        |
| Arsenic         | 1.02E-04        |
| Benzene         | 1.43E-03        |
| Beryllium       | 6.13E-06        |
| Cadmium         | 5.62E-04        |
| Chromium        | 7.15E-04        |
| Cobalt          | 4.29E-05        |
| Dichlorobenzene | 6.13E-04        |
| Formaldehyde    | 3.83E-02        |
| Hexane          | 9.19E-01        |
| Manganese       | 1.94E-04        |
| Mercury         | 1.33E-04        |
| Naphthalene     | 3.72E-04        |
| Nickel          | 1.07E-03        |
| Selenium        | 1.23E-05        |
| Toluene         | 1.87E-03        |
| Total PAH       | 9.80E-05        |
| Xylenes         | 8.92E-05        |
| <b>Total</b>    | <b>9.65E-01</b> |

Although an emissions increase is expected to result from this permitting action, the estimated facility-wide potential emissions are not expected to change. As provided in the application, the emissions units affected by this project include the Skim Milk Dryer (P101A and P101B), and the Skim Milk Fluid Bed (P102). The facility-wide emission increases resulting from this permitting action are provided in Table 5. The emission inventories for this permitting action have been reviewed by DEQ and appear to accurately reflect the potential emissions and emissions increases from the facility.

**Table 5 Project Emission Increases**

| Emissions Unit      |         | PM <sub>2.5</sub> |             | PM <sub>10</sub> |             |
|---------------------|---------|-------------------|-------------|------------------|-------------|
|                     |         | lb/hr             | T/yr        | lb/hr            | T/yr        |
| Skim Milk Dryer     | (P101A) | 0.07              | 0.30        | 0.17             | 0.75        |
|                     | (P101B) | 0.07              | 0.32        | 0.18             | 0.79        |
| Skim Milk Fluid Bed | (P102)  | 0.02              | 0.08        | 0.05             | 0.20        |
| <b>Total</b>        |         | <b>0.16</b>       | <b>0.70</b> | <b>0.40</b>      | <b>1.75</b> |

## ***Ambient Air Quality Impact Analyses***

The estimated emission rates of PM<sub>2.5</sub> and PM<sub>10</sub> from this project were below published DEQ modeling thresholds in the State of Idaho Air Quality Modeling Guideline.<sup>2</sup> The applicant has demonstrated compliance to DEQ's satisfaction that the emission increases from this facility will not cause or significantly contribute to a violation of any ambient air quality standard.

## **REGULATORY ANALYSIS**

### ***Attainment Designation (40 CFR 81.313)***

The facility is located in Jerome County, which is designated as attainment or unclassifiable for PM<sub>2.5</sub>, PM<sub>10</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, and Ozone.

### ***Facility Classification***

The facility is classified as a synthetic minor facility, because without limits on potential emissions, PM<sub>10</sub> emissions have the potential to exceed major source thresholds.

The facility is not classified as a major facility

### ***Permit to Construct (IDAPA 58.01.01.201)***

The facility's project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

### ***Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)***

The facility is classified as a synthetic minor facility, because without limits on the potential to emit, PM<sub>10</sub> emissions have the potential to exceed major source thresholds. The facility is not classified as a major facility for Tier I permitting purposes, in accordance with IDAPA 58.01.01.008.10. The facility is not a designated facility as defined in IDAPA 58.01.01.006.30.

The PM<sub>10</sub> emission limits for each emission unit (the dryers, fluid beds, and permeate powder receiver), as well as the production rate limits for MPC, skim milk, and permeate powders are considered synthetic minor limits used to demonstrate compliance with the major source threshold of PM<sub>10</sub>.

### ***PSD Classification (40 CFR 52.21)***

The facility is classified as a synthetic minor facility, because without limits on the potential to emit, PM<sub>10</sub> emissions have the potential to exceed the PSD major source threshold.

The PM<sub>10</sub> emission limits for each emission unit (the dryers, fluid beds, and permeate powder receiver), as well as the production rate limits for MPC, skim milk, and permeate powders, are considered synthetic minor limits used to demonstrate compliance with the major source threshold of PM<sub>10</sub>.

### ***NSPS Applicability (40 CFR 60)***

The facility is subject to the requirements of 40 CFR 60 Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, and 40 CFR 60 Subpart IIII—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

Boiler #1 and Boiler #2 are affected facilities in accordance with §60.40c(a), because construction of the boilers commenced after June 9, 1989, and because the maximum design heat input capacity for each boiler is between 10 and 100 MMBtu/hr (33.5 MMBtu/hr for each boiler).

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<sup>2</sup> Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

In accordance with §60.4200(a)(2)(i), the facility is subject to NSPS Subpart IIII because the permittee will operate a stationary compression ignition (CI) internal combustion engine (ICE) that will commence construction after July 11, 2005 and was manufactured after April 1, 2006.

### **NESHAP Applicability (40 CFR 61)**

The facility is not subject to any NESHAP.

### **MACT Applicability (40 CFR 63)**

The facility is below the major source thresholds of 10 tons/yr for each HAP and 25 tons/yr for any combination of HAP. The stationary RICE (emergency generator engine) is an area source subject to 40 CFR 63, Subpart ZZZZ because it commenced construction on or after June 12, 2006. Because this source is subject to regulation under 40 CFR 60, Subpart IIII, no further requirements were applicable under 40 CFR 63, Subpart ZZZZ.

An applicability review was completed for Subpart JJJJJ, which became effective following issuance of the initial permit to construct (i.e., after March 20, 2008). Because the boilers (P106 and P107) meet the definition of gas-fired boilers in §63.11237, they were determined not subject to this subpart.

#### Subpart ZZZZ

40 CFR 63, Subpart ZZZZ..... *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

40 CFR 63.6580 ..... *What is the purpose of subpart ZZZZ?*

*Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.*

40 CFR 63.6585 ..... *Am I subject to this subpart?*

*You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.*

- (a) *A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.*
- (b) *A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.*
- (c) *An area source of HAP emissions is a source that is not a major source.*
- (d) *If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.*
- (e) *If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.*
- (f) *The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).*
  - (1) *Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).*

- (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).
- (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

Because the permittee operates the emergency generator engine at an area source of HAP emissions (the facility is not major for HAP emissions), the permittee is subject to this subpart.

§63.6585(e) and (f) contains elective compliance exemption options which may require approval, which have not been requested nor included as a permit condition.

40 CFR 63.6590 ..... What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) Affected source. An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) Existing stationary RICE.

- (i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.
- (ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
- (iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
- (iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) New stationary RICE. (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
- (iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) Reconstructed stationary RICE. (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after December 19, 2002.

- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.
- (iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in §63.2 and reconstruction is commenced on or after June 12, 2006.

(b) Stationary RICE subject to limited requirements. (1) An affected source which meets either of the criteria in paragraph (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(h).

- (i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).
- (ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

- (2) *A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.*
- (3) *The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:*
- (i) *Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;*
  - (ii) *Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;*
  - (iii) *Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).*
  - (iv) *Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;*
  - (v) *Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;*
- (c) *Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart III, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.*
- (1) *A new or reconstructed stationary RICE located at an area source;*
  - (2) *A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;*
  - (3) *A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;*
  - (4) *A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;*
  - (5) *A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;*
  - (6) *A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;*
  - (7) *A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.*

The stationary RICE was classified as new affected source, because the emergency generator engine commenced construction on or after June 12, 2006. Because the stationary RICE is at an area source, and subject to regulations under 40 CFR 60, Subpart III (incorporated into the PTC), no further requirements apply for the emergency generator engine under 40 CFR 63, Subpart ZZZZ.

Subpart JJJJJ

40 CFR 63, Subpart JJJJJ.....National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

40 CFR 63.11193..... Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.

40 CFR 63.11195..... Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart.

- (a) Any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under this part.
- (b) Any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.
- (c) A boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by subpart EEE of this part (e.g., hazardous waste boilers), unless such units do not combust hazardous waste and combust comparable fuels.
- (d) A boiler that is used specifically for research and development. This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility. This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.
- (e) A gas-fired boiler as defined in this subpart.
- (f) A hot water heater as defined in this subpart.
- (g) Any boiler that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard.
- (h) Temporary boilers as defined in this subpart.
- (i) Residential boilers as defined in this subpart.
- (j) Electric boilers as defined in this subpart.
- (k) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.

40 CFR 63.11237..... What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2 (the General Provisions), and in this section as follows:

...

**Biomass** means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff ( e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

Biomass subcategory includes any boiler that burns any biomass and is not in the coal subcategory.

**Boiler** means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers, process heaters, and autoclaves are excluded from the definition of Boiler.

...

Calendar year means the period between January 1 and December 31, inclusive, for a given year.

...

Commercial boiler means a boiler used in commercial establishments such as hotels, restaurants, and laundries to provide electricity, steam, and/or hot water.

...

Electric boiler means a boiler in which electric heating serves as the source of heat. Electric boilers that burn gaseous or liquid fuel during periods of electrical power curtailment or failure are included in this definition.

...

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types.

Gaseous fuels includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas.

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

...

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass fuel and hot water is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 million Btu per hour heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on-demand hot water.

...

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Institutional boiler means a boiler used in institutional establishments such as, but not limited to, medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, and governmental buildings to provide electricity, steam, and/or hot water.

...

Liquid fuel includes, but is not limited to, distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil meeting the specification in 40 CFR 279.11, liquid biofuels, biodiesel, and vegetable oil, and comparable fuels as defined under 40 CFR 261.38.

...

Natural gas means:

- (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
- (2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 63.14); or
- (3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions (i.e., a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals). Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
- (4) Propane or propane-derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure  $C_3H_8$ .

...

Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.

Process heater means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. Process heaters include units that heat water/water mixtures for pool heating, sidewalk heating, cooling tower water heating, power washing, or oil heating.

...

Residential boiler means a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for:

- (1) A dwelling containing four or fewer families, or
- (2) A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.

...

Shutdown means the cessation of operation of a boiler for any purpose. Shutdown begins either when none of the steam or heat from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler, whichever is earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler.

Solid fossil fuel includes, but is not limited to, coal, coke, petroleum coke, and tire-derived fuel.

Solid fuel means any solid fossil fuel or biomass or bio-based solid fuel.

Startup means either the first-ever firing of fuel in a boiler for the purpose of supplying steam or heat for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam or heat from the boiler is supplied for heating and/or producing electricity, or for any other purpose.

Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler if any one of the following conditions exists:

- (1) The equipment is attached to a foundation.
- (2) The boiler or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler that replaces a temporary boiler at a location within the facility and performs the same or similar function will be included in calculating the consecutive time period unless there is a gap in operation of 12 months or more.
- (3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
- (4) The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

The boilers (P106 and P107) are industrial boilers located at an area source of HAP. However, because these boilers meet the definition of gas-fired boilers in §63.11237, they are not subject to this subpart or to any requirements in this subpart in accordance with §63.11195(e). The boilers are limited to the combustion of natural gas only in accordance with Permit Condition 6.4.

## Permit Conditions Review

This section describes those permit conditions that have been revised in this permitting action.

### Added Permit Condition 3.4

This permit condition was added to ensure compliance with the fugitive emissions requirements (Permit Condition 3.3).

### Permit Condition 4.4 (Revised Permit Condition 3.4)

#### 3.4 MPC / Skim Milk Production Limits

*The MPC / Skim Milk process shall process MPC or skim milk as the raw materials, and the production rate shall not exceed the values shown in Table 3.3.*

**Table 3.3 MPC / Skim Milk Process Production Limits**

| <i>Product</i>          | <i>Production Rate<br/>(lb/day)<sup>1</sup></i> |
|-------------------------|---|
| <i>MPC powder</i>       | <i>143,424 at 4.0% moisture content</i>         |
| <i>Skim milk powder</i> | <i>323,784 at 3.5% moisture content</i>         |

1) lb/day is defined as pounds of product per calendar day.

This permit condition was revised to increase the maximum production rate of MPC powder from the MPC / Skim Milk and the Permeate processes. This limit was initially established as a synthetic minor limit for limiting annual PM<sub>10</sub> emissions from the facility and to insure compliance with NAAQS, and was considered a surrogate limit for the process weight PM limit required in accordance with IDAPA 58.01.01.701.

Although the production rate for MPC powder has been revised, facility-wide potential emissions are not expected to change.<sup>3</sup> The corresponding emission limits in Permit Condition 4.3 remain applicable and have not been revised. Beyond the revision to the MPC powder production rate limit, no substantive changes to this permit condition were made (or intended).

### Permit Condition 4.6 (Revised Permit Condition 3.6)

#### 3.6 Baghouse Requirements

3.6.1 *The permittee shall install and operate the MPC / Skim Milk Dryer Baghouses (P101A and P101B) and the MPC / Skim Milk Fluid Bed Baghouse (P102) to control PM and PM<sub>10</sub> emissions from the MPC / Skim Milk Dryer and the MPC / Skim Milk Fluid Bed.*

3.6.2 *Within 60 days after initial startup of the facility, the permittee shall have developed a Baghouse Procedures document for the inspection and operation of the MPC / Skim Milk Dryer Baghouses (P101A and P101B) and the MPC / Skim Milk Fluid Bed Baghouse (P102). The Baghouse Procedures document shall be an independent document, but may include summaries of procedures in the manufacturer-supplied operating manuals.*

3.6.3 *The Baghouse Procedures document shall describe the procedures that will be followed to comply with General Provision 2 and at a minimum shall include:*

- *procedures for the set-up and calibration of the broken bag detectors*
- *schedule and procedures for checking the broken bag detector system response and drift;*
- *signal levels in percent of scale for baseline operation (without the presence of broken bags); and*
- *signal levels in percent of scale for alarms to indicate the presence of broken bags.*

<sup>3</sup> As provided in Attachment B to the application, testing of the MPC/Skim Milk Dryer stacks P101A and P101B over July 21-24, 2009 demonstrated compliance with the combined PM<sub>10</sub> emission limit of 7.9 lb/hr (Permit Condition 4.3). The measured emission rate was 1.01 lb/hr (combined; a compliance margin of 87%), while the production increase proposed represents an increase of less than 50%.

- 3.6.4 *The Baghouse Procedures document shall also include a schedule and procedures for corrective action that will be taken when an alarm signal level is exceeded by the broken bag detector. At a minimum the document shall include:*
- *procedures to determine if bags are ruptured; and*
  - *procedures to determine if bags are not appropriately secured in place.*
- 3.6.5 *The permittee shall maintain records of the dates that alarm signal levels are exceeded by the broken bag detectors in accordance with General Provision 7. The records shall include a description of the corrective action that was taken.*
- 3.6.6 *The Baghouse Procedures document shall be submitted to DEQ within 60 days after initial startup of the facility and shall contain a certification by a responsible official. Any changes to the Baghouse Procedures document shall be submitted within 15 days of the change.*
- 3.6.7 *The Baghouse Procedures document shall remain onsite at all times and shall be made available to DEQ representatives upon request.*
- 3.6.8 *The operating and monitoring requirements specified in the Baghouse Procedures document are incorporated by reference to this permit and are enforceable permit conditions.*

Because the procedures document has been developed and submitted, this permit condition has been revised for clarification to reflect ongoing requirements. No substantive changes to this permit condition were made (or intended).

Permit Condition 4.8 (Revised Permit Condition 3.8)

3.8 Performance Test

- 3.8.1 *Within 180 days after the initial startup of the MPC / Skim Milk Dryer, the permittee shall conduct a performance test to measure the PM<sub>10</sub> emissions from each of the MPC / Skim Milk Dryer Baghouse stacks (P101A and P101B) to demonstrate compliance with the pounds per hour PM<sub>10</sub> emission limit in Permit Condition 3.3. The permittee is encouraged to submit a source testing protocol for approval 30 days prior to conducting the performance tests.*
- 3.8.2 *The permittee shall test in accordance with IDAPA 58.01.01.157 and the conditions of this permit, including the operating requirements for the MPC / Skim Milk Dryer and General Provisions 6. The performance test shall be conducted in accordance with the procedures of EPA Reference Method 5, Method 202, and Method 9 in 40 CFR 60, Appendix A, or DEQ approved alternative.*
- 3.8.3 *The permittee shall monitor and record the following during the performance test:*
- *The type of raw material processed, MPC or skim milk.*
  - *The production rate of the MPC / Skim Milk process, in pounds per hour, once every 15 minutes.*
  - *The visible emissions observed, using the methods specified in IDAPA 58.01.01.625.*
- 3.8.4 *After the initial performance test, recurring performance testing shall be performed according to the following schedule for each baghouse:*
- *If the PM<sub>10</sub> emission rate in pounds per hour measured in the most recent test is less than or equal to 75% of the emission standard in Permit Condition 3.3, the next test shall be conducted within five years of the test date.*
  - *If the PM<sub>10</sub> emission rate in pounds per hour measured during the most recent performance test is greater than 75% but less than or equal to 90% of the emission standard in Permit Condition 3.3, the next test shall be conducted within two years of the test date.*
  - *If the PM<sub>10</sub> emission rate in pounds per hour measured during the most recent performance test is greater than 90% of the emission standard in Permit Condition 3.3, the next test shall be conducted within one year of the test date.*

Because initial performance testing has been completed,<sup>3</sup> this permit condition has been revised for clarification to reflect ongoing testing requirements. No substantive changes to this permit condition were made (or intended).

Permit Condition 5.6 (Revised Permit Condition 4.6)

4.6 Baghouse Requirements

- 4.6.1 *The permittee shall install and operate the Permeate Fluid Bed Baghouse (P104) and the Permeate Powder Receiver Baghouse (P105) to control PM and PM<sub>10</sub> emissions from the Permeate Fluid Bed and the Permeate Powder Receiver.*
- 4.6.2 *Within 60 days after initial startup of the facility, the permittee shall have developed a Baghouse Procedures document for the inspection and operation of the Permeate Fluid Bed Baghouse (P104) and the Permeate Powder Receiver Baghouse (P105). The Baghouse Procedures document shall be an independent document, but may include summaries of procedures in the manufacturer-supplied operating manuals.*
- 4.6.3 *The Baghouse Procedures document shall describe the procedures that will be followed to comply with General Provision 2 and at a minimum shall include:*
- *procedures for the set-up and calibration of the broken bag detectors*
  - *schedule and procedures for checking the broken bag detector system response and drift;*
  - *signal levels in percent of scale for baseline operation (without the presence of broken bags); and*
  - *signal levels in percent of scale for alarms to indicate the presence of broken bags.*
- 4.6.4 *The Baghouse Procedures document shall also include procedures for corrective action that will be taken when an alarm signal level is exceeded by the broken bag detector. At a minimum the document shall include:*
- *procedures to determine if bags are ruptured; and*
  - *procedures to determine if bags are not appropriately secured in place.*
- 4.6.5 *The permittee shall maintain records of the dates that alarm signal levels are exceeded by the broken bag detectors in accordance with General Provision 7. The records shall include a description of the corrective action that was taken.*
- 4.6.6 *The Baghouse Procedures document shall be submitted to DEQ within 60 days after initial startup of the facility and shall contain a certification by a responsible official. Any changes to the Baghouse Procedures document shall be submitted within 15 days of the change.*
- 4.6.7 *The Baghouse Procedures document shall remain onsite at all times and shall be made available to DEQ representatives upon request.*
- 4.6.8 *The operating and monitoring requirements specified in the Baghouse Procedures document are incorporated by reference to this permit and are enforceable permit conditions.*

Because the procedures document has been developed and submitted, this permit condition has been revised for clarification to reflect ongoing requirements. No substantive changes to this permit condition were made (or intended).

Permit Condition 5.7 (Revised Permit Condition 4.7)

4.7 Scrubber Requirements

- 4.7.1 *The permittee shall install and operate the Permeate Dryer Scrubber (P103) to control PM and PM<sub>10</sub> emissions from the Permeate Dryer.*

- 4.7.2 *Within 60 days after initial startup of the facility, the permittee shall have developed a Scrubber Procedures document for the inspection and operation of the Permeate Dryer Scrubber (P103). The Scrubber Procedures document shall be an independent document, but may include summaries of procedures in the manufacturer-supplied operating manuals.*
- 4.7.3 *The Scrubber Procedures document shall describe the procedures that will be followed to comply with General Provision 2 and the manufacturer's recommended specifications that shall be maintained for each of the following operating parameters:*
- *the minimum scrubbing media flow rate in gallons per minute;*
  - *the minimum pressure drop across the scrubber in inches of water; and*
  - *the maximum reading for the solids density meter.*
- 4.7.4 *The Scrubber Procedures document shall include requirements to periodically monitor and record the scrubbing media flow rate, the pressure drop, and the solids density meter reading no less frequently than each week. All records shall be maintained on-site for a period of 5 years in accordance with General Provision 7, and shall be made available to DEQ representatives upon request.*
- As an alternative to the manufacturer's recommended specifications, the permittee may establish new operating parameters by conducting a performance test that demonstrates compliance with the PM10 pound per hour emission limits in Permit Condition 4.3 for the Permeate Dryer stack while operating at the alternative operating parameters. The performance test shall be conducted in accordance with the Test Methods and Procedures specified in the Rules (IDAPA 58.01.01.157) and in accordance with a DEQ approved source test protocol. All operating parameters specified in this permit condition shall be continuously monitored and recorded during each test run. The permittee may request to operate outside of the operating parameters specified by the manufacturer during the performance test by submitting a written source protocol to DEQ for approval and requesting to operate under alternative operating parameters during the duration of the test. The protocol shall describe how the operating parameters will be monitored during the performance test. Once the source test is completed the permittee may request in writing to operate in accordance with alternative operating parameters. The request shall include a source test report and justification for the alternative operating parameters. Upon receiving DEQ written approval of the source test and the requested alternative operating parameters, the permittee shall operate in accordance with those DEQ approved alternative operating parameters. A copy of DEQ's approval shall be maintained on site with a copy of this permit.*
- 4.7.5 *The Scrubber Procedures document shall be submitted to DEQ within 60 days after initial startup of the facility and shall contain a certification by a responsible official. Any changes to the Scrubber Procedures document shall be submitted within 15 days of the change.*
- 4.7.6 *The operating and monitoring requirements specified in the Scrubber Procedures document are incorporated by reference to this permit and are enforceable permit conditions.*

Because the procedures document has been developed and submitted, this permit condition has been revised for clarification to reflect ongoing requirements. No substantive changes to this permit condition were made (or intended).

Permit Condition 5.9 (Revised Permit Condition 4.9)

4.9 Performance Test

- 4.9.1 *Within 180 days after the initial startup of the Permeate Dryer (P103), the permittee shall conduct a performance test to measure the PM<sub>10</sub> emissions from the Permeate Dryer Scrubber stack (P103) to demonstrate compliance with the pounds per hour PM<sub>10</sub> emission limit in Permit Condition 5.3. The permittee is encouraged to submit a source testing protocol for approval 30 days prior to conducting the performance test.*
- 4.9.2 *The permittee shall test in accordance with IDAPA 58.01.01.157 and the conditions of this permit, including the operating requirements for the Permeate Dryer and General Provision 6. The performance test shall be conducted in accordance with the procedures of EPA Reference Method 5, Method 202, and Method 9 in 40 CFR 60, Appendix A, or DEQ approved alternative.*
- 4.9.3 *The permittee shall monitor and record the following during the performance test:*
- *The production rate of the Permeate process, in pounds per hour, once every 15 minutes.*
  - *The scrubbing media flow rate of the Permeate Dryer Scrubber, in gallons per minute, once every 15 minutes.*
  - *The pressure drop across the Permeate Dryer Scrubber, in inches of water, once every 15 minutes.*
  - *The visible emissions observed, using the methods specified in IDAPA 58.01.01.625.*
- 4.9.4 *After the initial performance test, recurring performance testing shall be performed according to the following schedule:*
- *If the PM<sub>10</sub> emission rate in pounds per hour measured in the most recent test is less than or equal to 75% of the emission standard in Permit Condition 4.3, the next test shall be conducted within five years of the test date.*
  - *If the PM<sub>10</sub> emission rate in pounds per hour measured during the most recent performance test is greater than 75% but less than or equal to 90%, of the emission standard in Permit Condition 4.3, the next test shall be conducted within two years of the test date.*
  - *If the PM<sub>10</sub> emission rate in pounds per hour measured during the most recent performance test is greater than 90% of the emission standard in Permit Condition 4.3, the next test shall be conducted within one year of the test date.*

Because initial performance testing has been completed,<sup>3</sup> this permit condition has been revised for clarification to reflect ongoing testing requirements. No substantive changes to this permit condition were made (or intended).

Permit Condition 6.7 (Revised Permit Condition 5.7)

5.7 40 CFR 60, Subpart Dc – Reporting and Recordkeeping Requirements

*The permittee shall comply with all applicable reporting and recordkeeping requirements of 40 CFR 60, Subpart Dc – New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units.*

- *The permittee shall submit notification of the date of construction or reconstruction of each boiler and actual startup for each boiler, in accordance with 40 CFR 60.48c(a) and 40 CFR 60.7. This notification shall include:*
  - *The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.*
  - *The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.*
- *The permittee shall record and maintain records of the amount of fuel combusted in the boilers (Boiler #1 and Boiler #2) during each calendar month, in accordance with 40 CFR 60.48c(g)(2).*

- *All records shall be maintained by the permittee for a period of two years, in accordance with 40 CFR 60.48c(i).*
- *The reporting period for any reports required is each six-month period. All reports shall be submitted to DEQ and shall be postmarked by the 30<sup>th</sup> day following the end of the reporting period, in accordance with 40 CFR 60.48c(j). Reports shall be submitted to DEQ at the address listed in Permit Condition 3.9.*

This permit condition has been updated to allow for the use of either compliance option available under 40 CFR 60.48c(g)(2) and (3) for monitoring of boiler fuel usage.

Permit Condition 7.5 (Revised Permit Condition 6.5)

**6.5 40 CFR 60, Subpart IIII - Fuel Requirements for Owners and Operators**

*The permittee shall comply with the applicable fuel requirements of 40 CFR 60, Subpart IIII – New Source Performance Standards for Compression Ignition Internal Combustion Engines.*

- *The permittee shall operate and maintain the emergency generator according to the manufacturer's written instructions or procedures that are approved by the engine manufacturer, over the entire life of the engine, in accordance with 40 CFR 60.4206.*
- *Beginning October 1, 2007, the permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(a), with a maximum sulfur content of 500 ppm, and a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent, in accordance with 40 CFR 60.4207(a).*
- *Beginning June 1, 2010, the permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b), with a maximum sulfur content of 15 ppm, and a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent, in accordance with 40 CFR 60.4207(b).*

This permit condition has been streamlined to reflect the most stringent diesel fuel requirements, which became applicable June 1, 2010. No substantive changes to this permit condition were made (or intended).

## **PUBLIC REVIEW**

### ***Public Comment Opportunity***

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

## APPENDIX A – EMISSIONS INVENTORIES

### Emissions Inventory

An emission inventory was developed for the MPC/Skim Milk Dryer. The pre-project controlled estimated emissions are shown below in Table 1. Particulate matter calculations are based on a source test completed at the IMP facility on July 21-24, 2009 (see Attachment B). The Source Test did not specifically measure PM<sub>2.5</sub>, but did measure condensable particulate matter (CPM), which is used as an approximation of PM<sub>2.5</sub> in the tables below. Per permit condition 3.8, source test measurements were only taken on P101A and P101B. An inquiry to CE Rogers confirmed that the baghouse removal efficiencies for P101A, P101B, and P102 are equivalent. The average removal efficiencies measured for P101A and P101B were applied to P102.

The calculations correlate measured PM emissions with measured MPC throughput, resulting in production-based emission factors. The calculations for the values presented in the tables below are included in Attachment E; the calculation spreadsheets are provided in the electronic copy of this submittal. Other pollutants (NO<sub>x</sub>, CO, SO<sub>2</sub>, and VOC) are not affected by this proposed modification. Lead emissions are negligible at the facility, estimated at 1.96E-05 lb/hr (as a quarterly average) from dryer P101, and are also excluded from the analysis.

Tables 1 and 2 below present a summary of the pre-project and post-project particulate emissions, after emission controls. Table 3 presents the changes in estimated particulate emissions resulting from the project. The tables below present the information required by the DEQ's *Proposed Minor Modification to an Existing Minor Facility - Change In Potential to Emit Application Template and Instructions*. Based on source test data, both the pre- and post-project emission rates for PM<sub>10</sub> are well below the 7.90 lb/hr and 34.60 T/yr (combined for both P101A and P101B) allowable rates stated in the original 2008 permit. The estimated pre- and post-project PM<sub>10</sub> emission rates for P102 are below the 0.78 lb/hr and 3.42 T/yr allowable rates stated in the original 2008 permit as well.

| Table 1. Pre-Project Potential to Emit for Criteria Pollutants |                               |             |                                |             |
|--|-------------------------------|-------------|--------------------------------|-------------|
| Emissions Unit   | PM <sub>10</sub> <sup>1</sup> |             | PM <sub>2.5</sub> <sup>2</sup> |             |
|  | lb/hr                         | T/yr        | lb/hr                          | T/yr        |
| P101A  | 0.38                          | 1.69        | 0.15                           | 0.67        |
| P101B  | 0.37                          | 1.84        | 0.15                           | 0.65        |
| P102   | 0.10                          | 0.44        | 0.04                           | 0.18        |
| <b>Total</b>   | <b>0.86</b>                   | <b>3.77</b> | <b>0.34</b>                    | <b>1.50</b> |

1. Based on Source Test data for PM<sub>10</sub>
2. Based on Source Test data for CPM

| Table 2. Post-Project Potential to Emit for Criteria Pollutants |                               |             |                                |             |
|---|-------------------------------|-------------|--------------------------------|-------------|
| Emissions Unit  | PM <sub>10</sub> <sup>1</sup> |             | PM <sub>2.5</sub> <sup>2</sup> |             |
|   | lb/hr                         | T/yr        | lb/hr                          | T/yr        |
| P101A   | 0.56                          | 2.44        | 0.22                           | 0.97        |
| P101B   | 0.56                          | 2.44        | 0.22                           | 0.97        |
| P102  | 0.15                          | 0.64        | 0.06                           | 0.26        |
| <b>Total</b>  | <b>1.26</b>                   | <b>5.52</b> | <b>0.50</b>                    | <b>2.20</b> |

1. Based on Source Test data for PM<sub>10</sub>
2. Based on Source Test data for CPM

| Table 3. Changes in Potential to Emit for Criteria Pollutants |             |             |             |             |
|---|-------------|-------------|-------------|-------------|
| Pollutant   | 2010        |             | 2011        |             |
|   | lb/hr       | T/yr        | lb/hr       | T/yr        |
| P101A   | 0.17        | 0.75        | 0.07        | 0.30        |
| P101B   | 0.18        | 0.79        | 0.07        | 0.32        |
| P102  | 0.05        | 0.20        | 0.02        | 0.08        |
| <b>Total</b>  | <b>0.40</b> | <b>1.75</b> | <b>0.16</b> | <b>0.70</b> |

1. Based on Source Test data for PM<sub>10</sub>
2. Based on Source Test data for CPM

SUMMARY OF FACILITY-WIDE EMISSION RATES FOR GHG - POINT SOURCES

| Emissions Units     | Stack ID | scf/hr         | gal/hr       | CO <sub>2</sub> |         | N <sub>2</sub> O |         | CH <sub>4</sub> |         | GHG CO <sub>2</sub> e |                        |
|---------------------|----------|----------------|--------------|-----------------|---------|------------------|---------|-----------------|---------|-----------------------|------------------------|
|                     |          |                |              | lb/MMscf        | lb/kgal | lb/MMscf         | lb/kgal | lb/MMscf        | lb/kgal | T/yr                  | CO <sub>2</sub> e T/yr |
| Point Source(s)     |          |                |              |                 |         |                  |         |                 |         |                       |                        |
| Skim Milk Dryer     | P101     | 39216          |              | 120000          |         | 2.2              |         | 2.3             |         | 2.06E+04              | 20,738                 |
| Permeate Dryer      | P103     | 11765          |              | 120000          |         | 2.2              |         | 2.3             |         | 6.18E+03              | 6,222                  |
| Boiler #1           | P106     | 32819          |              | 120000          |         | 2.2              |         | 2.3             |         | 1.73E+04              | 17,365                 |
| Boiler #2           | P107     | 32819          |              | 120000          |         | 2.2              |         | 2.3             |         | 1.73E+04              | 17,355                 |
| Emergency Generator | P108     |                | 72.2         |                 | 22300   |                  | 0.26    |                 |         | 8.05E+01              | 81                     |
| <b>Total</b>        |          | <b>116,619</b> | <b>72.20</b> |                 |         |                  |         |                 |         | <b>61,378</b>         | <b>61,751</b>          |