

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division
1520 E. Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901**

Columbia Falls Aluminum Company, LLC
2000 Aluminum Drive
Columbia Falls, MT 59912

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

| Facility Compliance Requirements | Yes | No | Comments |
|--|------------|-----------|---|
| Source Tests Required | X | | Method 5, 13B, 315, 14 |
| Ambient Monitoring Required | X | | POM |
| COMS Required | | X | |
| CEMS Required | | X | |
| Schedule of Compliance Required | | X | |
| Annual Compliance Certification and Semi-Annual Reporting Required | X | | |
| Monthly Reporting Required | | X | |
| Quarterly Reporting Required | X | | |
| Applicable Air Quality Programs | | | |
| ARM Subchapter 7 Preconstruction Permitting | X | | MAQP #2655-05 |
| New Source Performance Standards (NSPS) | | X | |
| National Emission Standards for Hazardous Air Pollutants (NESHAPS) | X | | 40 CFR, Subpart M |
| Maximum Achievable Control Technology (MACT) | X | | 40 CFR 63, Subpart LL, & 40 CFR 63, Subpart RRR |
| Major New Source Review (NSR) | | X | |
| Risk Management Plan Required (RMP) | | X | |
| Acid Rain Title IV | | X | |
| State Implementation Plan (SIP) | X | | MT State SIP |

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the EPA and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original application submitted by Columbia Falls Aluminum Company, LLC (CFAC), on February 16, 2006, and additional information submitted on February 21, 2006, and September 01, 2006.

B. Facility Location

The CFAC facility is located in Section 3, Township 30 North, Range 20 West, Flathead County, Montana. The UTM coordinates for the facility are 712.2 km Easting, 5363.8 km Northing (Zone 11). The elevation of the plant is 3108 feet, with the nearest significant complex terrain, Teakettle Mountain, rising approximately 2000 additional feet above the valley floor and CFAC.

The facility is adjacent to the community of Columbia Falls, and the Flathead River passes South of CFAC's main complex. There are two PSD Class 1 Airsheds nearby the facility, the closest being Glacier National Park whose boundary is approximately 8 miles East of CFAC. The other Class 1 Airshed is the Bob Marshall Wilderness, and it is within approximately 25 miles of Columbia Falls.

C. Facility Background Information

CFAC operates five Vertical Stud Soderberg potlines at the Columbia Falls plant. Each potline has 120 individual cells that produce aluminum by the Hall-Heroult process. Annual operating capacity is approximately 185,000 tons of Aluminum based on an average current efficiency of 90.5%. The Anaconda Company initially constructed two potlines ('53-55), with startup occurring in 1955 (West Plant). A third potline was constructed and its startup occurred in 1965; the final two potlines were constructed shortly after the third, with startup occurring in 1968 (East Plant).

The Hall-Heroult process consists of passing an electric current through aluminum oxide ore, or alumina (Al_2O_3), dissolved in molten cryolite. The reduction process is accomplished in a Vertical Stud Soderberg style pot. Soderberg technology describes the type of consumable carbon anode used in the process. CFAC Soderberg pots (cells) have 60-ton anodes (Positive Electrode) and 100-ton cathodes (negative electrode).

The cells or "pots" are housed in buildings called potrooms. Two potrooms are connected electrically in series to form one potline. Therefore, at CFAC there are 10 potrooms that comprise the five potlines. Emissions from each pot are divided into two categories: primary emissions and secondary emissions. Primary emissions are captured at the pots and routed to the primary air pollution control system, the A398 dry alumina scrubbers. Secondary emissions are fugitive emissions from the pots that are vented out the roofline of the potrooms

Alumina is fed into a molten bath of cryolite, and heated to about 1740°F (949°C). Through the electrochemical process, electricity passes from the anode to the cathode, causing the aluminum to be reduced. The aluminum metal sinks below the cryolite bath to form a molten aluminum "pad". The remaining oxygen atoms bond with the carbon from the anode of the cell to form carbon dioxide, which is vented from the pot to the primary emission control system. Carbon Monoxide is also generated, and is combusted at the cell. Other emissions from the process include both particulate fluoride and gaseous hydrogen fluoride as well as hydrocarbon emissions containing polycyclic organic matter. The aluminum metal is siphoned from the pot every 48 hours and transported to the casting Department, where it is cast into ingots of various sizes, shapes, and alloys. Typically each pot produces approximately 1700 pounds of aluminum per day. Each pot is tapped every other day, which results in a pot operational cycle of 48 hours.

The facility underwent significant improvements between 1976 and 1980, when all aluminum reduction cells and potline operation were converted to Sumitomo Technology. Sumitomo Technology was adopted by the Anaconda Company in an effort to reduce particulate and fluoride emissions from the facility, and to show compliance with Montana's stringent Fluoride Standard. The Sumitomo Technology, purchased by AAC from the Sumitomo Chemical Company LTD, is a combination of engineering (structural) changes to the aluminum reduction cells, operational, and process changes, and raw material changes, for Soderberg aluminum reduction cells and potlines.

Other benefits, besides reduced power consumption and reduced emissions (power consumption, as claimed by the Sumitomo Company, could easily be reduced by 15-20 %, and emissions of hydrocarbon smoke and fluoride could be reduced by 50%...), realized by AAC when adopting the Sumitomo Technology were a dramatic increase in cell operating lifespan and a reduction in man-hours required to operate and maintain the facility.

During that same time period (1976-1980), the Anaconda Company also converted the Columbia Falls facility from multiclones and wet scrubbers to Alcoa A398 Dry Alumina Scrubbers as its primary emission control device, and installed ten dry scrubbers operating in two groups: four dry scrubbers for the West Plant and six dry scrubbers for the East Plant. Dry Alumina Scrubbers are designated as appropriate primary pollution control devices for purposes of the Aluminum MACT.

Preconstruction Permit History

The aluminum smelter was constructed prior to 1968 and has been operated as an existing source since that time. The facility processes alumina ore using electrolytic reduction cells to produce aluminum ingots. CFAC has been issued eight previous permits from 1976 to 1990. A description of these previous permits is as follows:

Permit #972 was issued on July 16, 1976, for the installation of a dry scrubbing system - Sumitomo Soderberg process to control emissions from the reduction cells.

Permit #1615 was issued on June 25, 1981, for the conversion of the unloader baghouses controlling the #1 and #2 alumina unloading systems from shaker type baghouses to pulse-jet baghouses.

Permit #1620 was issued on September 24, 1981, for the installation of a baghouse to control emissions from the coke unloading area.

Permit #1672 was issued on April 20, 1982, for the construction of a new aluminum casting facility. The facility was never constructed and the permit will be revoked.

Permit #1688 was issued on July 1, 1982, for the construction of a temporary alumina storage building and the associated alumina transfer operation. The transfer operation has been completed and the building is currently being used for other purposes and CFAC has no intentions of using it to store alumina in this manner again. This permit will be revoked.

Permit #1820 was issued on October 21, 1983, for the installation of the west conveyor storage silo baghouse, the coke and coal distribution baghouse, and the paste plant Draco dust control system.

Permit #2568 was issued on April 10, 1989, for the installation of a wet scrubber to control emissions from the paste plant area.

Permit #2655 was issued on December 13, 1990, for the installation of an alumina recycle baghouse and a baghouse to control emissions from the Treatment of Aluminum in Crucibles (TAC) system.

Permit Alteration #2655-01 was issued on March 3, 1996, for the conversion of the existing *west conveyor storage baghouse* in the west alumina unloader station and the *bucket elevator baghouse* in the east alumina unloader system from shaker-type baghouses to pulse-jet baghouses. The *west conveyor storage baghouse* will also be relocated from silo #2 to silo #3.

Also included in this permitting action is a system name change. The *#1 and #2 alumina unloading systems* referred to in Permit #1615 are actually the *west and east alumina unloader baghouses*, respectively. These baghouses were authorized to be modified from shaker-type baghouses to pulse-jet baghouses by Permit #1615. A more complete description of the unloader station control systems is contained in the analysis for Permit #2655-01.

Permit #2655-02, issued on July 5, 1997, authorized the replacement of the existing anode pin cleaning machine with a new machine which will clean ten anode pins at a time. The cleaning system consists of a shotblasting machine for the removal of scale from the anode pins. Particulate emissions from the system are controlled with a cartridge-type fabric filter. Emissions from the filter will be exhausted inside the pin cleaning room.

Emissions from the facility are expected to decrease from the pin cleaning machine replacement. Because the system will vent inside the pin cleaning room, a decrease in the particulate exhausted to atmosphere is anticipated. The existing system currently exhausts directly to atmosphere.

After issuance of the Department's preliminary determination, CFAC requested that the west alumina elevator baghouse identified in Section II.C.1 of the permit be changed to the west conveyor storage baghouse to be consistent with the changes made in Permit #2655-01.

On June 27, 1996, CFAC submitted a permit application to modify the paste plant anode dust control system. This application was given **Permit #2655-03**. Based on the soon to be issued de minimis rule - ARM 17.8.705(1)(q), this project would not require a permit to be issued. CFAC determined that construction would not commence until after the rule was promulgated and withdrew the application. Therefore, **Permit #2655-03** was never issued.

Permit #2655-04 allowed CFAC to replace the existing wet scrubber on the paste plant mixers with a dry coke pitch fume scrubber for the control of particulates and polycyclic organic matter (POM). The dry scrubber is required by 40 CFR 63, Subpart LL - National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Smelters. The new dry scrubber also controlled emissions from the extruders, which is currently uncontrolled.

The emissions from the mixers and extruders are collected with hoods and routed to a venturi reactor where coke fines are injected. The pitch fume binds with the coke particles and is then collected with a pulse-jet baghouse. After collection, the solids are returned to the paste plant production system and used as coke in the manufacture of anode briquettes.

Permit #2655-04 allowed the replacement of the wet scrubber, and also allowed the routing of a previously-uncontrolled source, with a new dry scrubber. The new dry scrubber significantly decreased the emissions of both particulate and POM from the paste plant.

Permit #2655-04 also changed Attachment 1 to remove reporting parameters no longer needed by the Department. The deadline to submit CFAC's annual fluoride-in-forage data was also changed from February 1 to March 1, and the rule references in the permit were also updated to correspond with the newly re-codified Air Quality Rules.

Permit #2655-05 was issued on December 26, 1999, for the transfer of ownership of Columbia Falls Aluminum Company (CFAC) to Glencore AG. The facility has been renamed Columbia Falls Aluminum Company LLC, and is referred to as "CFAC" within this permit. CFAC informed the Department of the

ownership change in a letter dated April 16, 1999, and again in a fax transmittal dated May 26, 1999. The last communication indicated that the change of ownership would occur no later than June 1, 1999. The Department acknowledged the change of ownership in a letter to CFAC dated June 22, 1999.

Title V Permit History

On November 6, 2001, Title V Operating **Permit #OP2655-00** was issued to CFAC. The permit included all applicable conditions under the Title V of the Clean Air Act.

On November 28, 2001, CFAC requested a modification to Permit #OP2655-00. The request was for the removal of the following items as attachments to the Title V Permit: Appendix E – CFAC MACT Implementation Plan; Appendix F – CFAC MACT Quick Reference Guide; Appendix G – Startup, Shutdown and Malfunction Plan (SSM); Appendix I – Pollution Control Device Inspection & Maintenance Plan. Although the hard copies of these appendices have been removed from the permit, the contents of the appendices remain applicable requirements as stated in the Title V Operating Permit #OP2655-01. A hard copy of the fore mentioned appendices, are available at the following locations:

The Department of Environmental Quality
Permitting and Compliance Division
Air Resources Management Bureau
1520 E. Sixth Ave.
Helena, Montana 59620-0901
Bureau Phone #: (406) 444-3490

OR

Columbia Falls Aluminum Company, LLC
2000 Aluminum Drive
Columbia Falls, Montana 59912
Phone #: (406) 892-8211

In Section III, B5, C5, D7, G3, N4, and O3, the permit language was changed from “CFAC shall continually operate and maintain the baghouse in accordance with Appendix I of this permit” to “CFAC shall operate and maintain the baghouse in accordance with Appendix I of this permit”.

In Appendix H “Potline Roof Vent Opacity Compliance Demonstration”, the last sentence was changed from “CFAC shall perform daily visual surveys following the procedures outlined above: to “CFAC shall perform daily visual observations in a manner similar to the Method 9 procedures outlined above and it is understood by all parties that these daily visual observations are not Method 9 observations.”

In Section III.I.8 the language was rewritten to state “Method 9 tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual. Method 9 test reports shall be maintained on site and must be submitted to the Department upon request.”

In Section III.H.5, the permit language was updated to be consistent with Section III.I.5.

CFAC filed an appeal to the Board of Environmental of Review on June 15, 2001. The appeal was based on comments on Appendix H of the permit, which contains the Compliance Schedule. The BER made a final ruling on November 16, 2001, by issuing a Stipulation and Order that included minor changes to Permit OP2655-00. The permit was issued effective on November 16, 2001, with the minor changes included. The current Title V Operating Permit #OP2655-02 includes these changes.

Permit #OP2655-01 replaced Permit #OP2655-00.

D. Current Permit Action

On February 16, 2006, the Department received a renewal application for CFAC's Title V Operating Permit #OP2655-01. The request included two changes to the permit. First, an anode dust control baghouse was added to the facility in 1996, and at that time, the Department did not require a permit. The project was approved by the Department in a letter dated August 13, 1996. However, the baghouse was never added to the permit. The second change was the re-building of the east unloader baghouse (EU005) as part of a supplemental environmental project related to the April 2004 fluoride exceedance. Additional correspondence concerning this project was received by the Department on February 21, 2006.

In addition, on September 1, 2006, the Department received a request from CFAC to install and operate a sow casting line in the existing Cast House to produce sow ingots. The project was considered a de minimis change, and the sow casting line was added in the current permit action.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on October 9, 2007.

F. Compliance Designation

The CFAC facility was last inspected on February 7, 2006, and was determined to be in compliance with the terms and conditions of MAQP #2655 and Title V Operating Permit #OP2665-01. However, fluoride emissions for the month of April 2004 were above the single potline limit. Therefore, the Department issued a violation letter to CFAC on June 16, 2004. On August 30, 2004, the Department notified CFAC that initiation of an enforcement action was taking place. The Department and CFAC reached a settlement on the violation and an Administrative Order on Consent (AOC) was signed on February 22, 2006. There were no other enforcement actions against CFAC during the time the inspection report covered (September 1, 2004 through March 21, 2006).

Compliance History

The CFAC facility was inspected on January 26, 2000, June 22, 2001, and September 17, 2002, and determined to be in compliance with the terms and conditions of its Preconstruction Permit # 2655-05. The facility has been conducting testing for Fluorides and POM on the A398 dry scrubbers and the Method 14 manifolds to determine compliance with 40 CFR 63, Subpart LL, the "Aluminum MACT." The compliance date for the Aluminum MACT was October 7, 1999, and compliance reporting is performed on a quarterly basis. The Aluminum MACT allows 45 days to prepare and submit the report after the conclusion of the reporting quarter. CFAC identified in Revision 2 of their MACT Implementation Plan (IP) that the facility would demonstrate compliance with the 5-line (average) Fluoride emission limit for VSS2 facilities, and the single line Polycyclic Organic Matter (POM) emission limit for VSS2 facilities.

CFAC has submitted (two) additional revisions to their IP since June 2000. CFAC submitted revision 3 to the IP, by fax, on June 14, 2000, and in that submittal indicated that they were electing to perform POM emission averaging, and that they would demonstrate compliance with the five-line POM emission limit (CFAC elected to demonstrate compliance with the single-line POM limit prior to the IP revision 3 submittal). The Department is allowed 120 days to review and either approve or disapprove IP revisions, and prior to responding, CFAC submitted an additional IP revision (revision 4) to the Department, as well as an updated SSM. A revision 5 of CFAC's IP was submitted on October 2, 2000. The earliest that the five-line POM emission limit would have been applicable, allowing a 120-day decision period, is October 12, 2000 (4th quarter of 2000).

CFAC has submitted several MACT compliance reports. The first report, received on February 11, 2000, indicated that three potlines were not in compliance with the single line limit for POM, VSS2 category aluminum reduction plants, during the last quarter of 1999. The first report did indicate that CFAC was in compliance with the fluoride emission limit (five-potline average). CFAC has not been able to demonstrate compliance with the single line POM emission limit, or the five-line average POM emission limit, up through the date that the plant suspended operations in January 2001. CFAC has, however, demonstrated compliance with the five-line fluoride emission limit since the MACT compliance date.

CFAC initially assumed that the source of their POM problem lied in the testing equipment, methodology, or analysis. The facility has been performing extensive in-house testing, and also has a contractor performing testing, in an attempt to determine the source of POM test result discrepancies and the high POM test results. CFAC has also identified several other possible contributing sources for their higher POM test results, including operation of the Paste Plant dry coke scrubber, a new supplier of coal tar pitch, changes in operation, and the variability intrinsic to Method 315 (POM test method).

CFAC temporarily shut down 2.5 potlines in the fall of 2000 due to high power costs. CFAC shut down (temporarily) the remaining 2.5 potlines in January of 2001, also as a result of high power costs. CFAC has indicated that the facility intends to request the EPA to revise their current POM emission limit, such that 1999/2000 year testing data shall be used to establish an updated VSS2 POM emission limit. Upon such date as the facility commences operations (anticipated startup date of January, 2002), they must demonstrate compliance with either the existing POM limit, or the proposed/new POM limit within a reasonable period of time (180 days) after startup.

The facility will be required to deliver a plan to resolve their POM compliance issues. A compliance schedule is provided in Appendix H of Operating Permit #OP2655-00. The Department understands that EPA has a primary role in establishing a revised POM emission limit, and that EPA may impose alternative timelines for a compliance demonstration based upon their assessment of this issue, the test data collected thus far, or other relevant data. The Department or EPA may determine that the timeframes identified in the compliance schedule may need to be altered, dependant upon EPA's response to CFAC's request, CFAC's actual startup date, or other pertinent issues.

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

Petroleum Coke and Coal Tar Pitch are transported to CFAC for the production of anode briquettes. The coke is pulverized by ball mills prior to being mixed with the heated Pitch. The mixture is then extruded into a water bath, and then transported by conveyor to individual storage locations for the West Plant potlines and East Plant potlines. The anode briquettes are then loaded into trucks that feed to the top of each of the Soderberg anodes once every 48 hours. Unreacted Alumina is brought by rail to the East and West Plant unloader and storage silo systems. From those unloading and storage locations, the alumina is conveyed (air slides) to the West and East Plant dry scrubbing system silos prior to being injected into the Alcoa A398 reactors. The reacted alumina is then fed to storage silos, and ultimately to oreing trucks that feed the reacted ore to the pots once every 3 hours.

The five potlines at CFAC each have two potrooms, and each potroom has 60 reduction cells, or pots, for a total of 600 pots for the production of aluminum. The reduction process occurs when the 120 pots that comprise one potline are subjected to a continuous (direct) current in excess of 100,000 amps (100 KA). The pots are connected in series, with the voltage drop across each pot close to, but typically greater than, four volts. This very high electrical current produces a pot environment of approximately 950°C.

Pots are tapped once every 48 hours, with the metal then going to one of 6 casting furnaces. The molten aluminum can then either be sent directly to casting, or fluxed and alloyed prior to casting. Casting of molten aluminum can occur in any of 6 casting pits. The T-ingots and Sheet ingots from casting are then sent to saws for cutting to length, then stacked in a storage yard for shipment to CFAC customers.

Other necessary potline activities to maintain the reduction cells (pots) are: Pin Pulling, Jack Slipping, Anode Blowdown, Crust Breaking, Skirt Changes, Burner Cleaning, and Floor Sweeping. Ancillary activities necessary for CFAC to maintain aluminum production are: pin cleaning and pot rebuilding, to name only two.

B. Emission Units and Pollution Control Device Identification

The emission units regulated by this permit are the following (ARM 17.8.1211).

| Emission Unit ID | Emission Unit Description | Pollution Control Device or Practice |
|-------------------------|--|--|
| EU001 | Ball Mill North - MH01 | Baghouse |
| EU002 | Ball Mill South - MH02 | Baghouse |
| EU003 | Coke Silo - MH04 | Baghouse |
| EU004 | East Alumina Elevator - MH06 | Baghouse |
| EU005 | East Alumina Unloading - MH07 | Baghouse |
| EU006 | East Conveyor Storage - MH08 | Baghouse |
| EU007 | West Alumina Unloading - MH09 | Baghouse |
| EU008 | Anode Dust Control System - MH03(1) & MH03(2) | Baghouse |
| EU009 | Coke Unloading - MH05 | Baghouse |
| EU010 | West Conveyor Storage - MH10 | Baghouse |
| EU011 | Potline Sweeping - AR04 | Baghouse |
| EU012 | Treatment of Aluminum Crucibles (TAC) Operations - CO10 | Baghouse |
| EU013 | Pin Cleaning - West Plant - CR07 | Baghouse |
| EU014 | Pin Cleaning - East Plant - CR07a | Baghouse |
| EU015 | Paste Plant Extruder - PP01 | Procedair Dry Coke Scrubber (Baghouse) |
| EU016 | Paste Plant Mixer - PP02 | Procedair Dry Coke Scrubber (Baghouse) |
| EU017 | Pinhole Past Drying - PP03 | Baghouse |
| EU018 | Pitch Storage Tank Vents - PP04 | None |
| EU019 | Paste Plant Oil Heating System - PP05 | None |
| EU020 | East Plant Dry Scrubber Alumina Transfer (North) - AR01 | Baghouse |
| EU021 | East Plant Dry Scrubber Alumina Transfer (South) - AR02 | Baghouse |
| EU022 | West Plant Dry Scrubber Alumina Transfer (North) - AR06 | Baghouse |
| EU023 | West Plant Dry Scrubber Alumina Transfer (South) - AR07 | Baghouse |
| EU024 | Primary Gas Collection System - West Plant (Potlines 1 & 2) - AR05 | Alcoa A398 Dry Alumina Scrubber #1 (Reactor #1 & Baghouse) |
| EU025 | Primary Gas Collection System - West Plant (Potlines 1 & 2) - AR05 | Alcoa A398 Dry Alumina Scrubber #2 (Reactor #2 & Baghouse) |
| EU026 | Primary Gas Collection System - West Plant (Potlines 1 & 2) - AR05 | Alcoa A398 Dry Alumina Scrubber #3 (Reactor #3 & Baghouse) |
| EU027 | Primary Gas Collection System - West Plant (Potlines 1 & 2) - AR05 | Alcoa A398 Dry Alumina Scrubber #4 (Reactor #4 & Baghouse) |
| EU028 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #5 (Reactor #5 & Baghouse) |
| EU029 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #6 (Reactor #6 & Baghouse) |
| EU030 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #7 (Reactor #7 & Baghouse) |
| EU031 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #8 (Reactor #8 & Baghouse) |
| EU032 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #9 (Reactor #9 & Baghouse) |
| EU033 | Primary Gas Collection System - East Plant (Potlines 3, 4, & 5) - AR05 | Alcoa A398 Dry Alumina Scrubber #10 (Reactor #10 & Baghouse) |
| EU034 | Potline #1 Roof Vent, West Plant - AR03 | None |
| EU035 | Potline #2 Roof Vent, West Plant - AR03 | None |
| EU036 | Potline #3 Roof Vent, East Plant - AR03 | None |
| EU037 | Potline #4 Roof Vent, East Plant - AR03 | None |
| EU038 | Potline #5 Roof Vent, East Plant - AR03 | None |
| EU039 | Casting Furnace #3 - CO01 | None |
| EU040 | Casting Furnace #4 - CO02 | None |
| EU041 | Casting Furnace #6 - CO03 | None |
| EU042 | Casting Furnace #7 - CO04 | None |

| | | |
|-------|------------------------------------|------------------------|
| EU043 | Casting Furnace #8 & #9 - CO05 | None |
| EU044 | Casting Pit #3 - CO06 | None |
| EU045 | Casting Pit #4 - CO06 | None |
| EU046 | Casting Pit #6 & #7 - CO06 | None |
| EU047 | Casting Pit #8 & #9 - CO06 | None |
| EU048 | Dross Handling - CO07 | None |
| EU049 | Sheet Ingot Saw – CO08 | Target Box and Cyclone |
| EU050 | T-Ingot Saw – CO09 | Target Box and Cyclone |
| EU051 | Sandblasting Activities - CR01 | None |
| EU052 | Lectromelt Furnace - CR03 | Wet Scrubber |
| EU053 | Rod Mill / Material Storage - CR04 | Baghouse |
| EU054 | Change House Boiler #1 - MP01 | None |
| EU055 | Change House Boiler #2 - MP02 | None |
| EU056 | Lab Boiler #1 - MP07 | None |
| EU057 | Machine Shop Boiler #1 - MP08 | None |
| EU058 | Machine Shop Boiler #2 - MP09 | None |
| EU059 | Paste Plant Boiler #1 - MP11 | None |
| EU060 | Paste Plant Boiler #2 - MP12 | None |
| EU061 | Warehouse Boiler #1 - MP16 | None |
| EU062 | Warehouse Boiler #2 - MP17 | None |
| EU063 | Haul Road Emissions - MP05 | None |
| EU064 | Gasoline Storage Tank - MP04 | None |
| EU065 | Sow Casting Line | None |

C. Categorically Insignificant Emitting Units/Activities

| Emission Unit ID | Description |
|-------------------------|--|
| IEU03 | Collector Bar Shotblasting - CR02 |
| IEU04 | Anode Debris Storage - CR05 |
| IEU05 | Anode Abrader - CR06 |
| IEU06 | Shed 11 Pot Rebuild / Masonry Mixer - CR08 |
| IEU07 | Diesel Storage Tanks - MP03 |
| IEU09 | Open Burning - MP10 |
| IEU10 | Plantsite Sanitary Landfill - MP13 |
| IEU11 | Propane Storage - MP14 |
| IEU12 | Waste Oil Heat Recovery - MP18 |
| IEU13 | MSDS Chemicals / Plantwide Usage - MP19 |

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

The Aluminum MACT allows CFAC to select potline emission limits, applicable to EU024-EU038, based upon the following guidelines:

| | lb TF / Ton Al produced | lb POM / Ton Al produced |
|----------------------------------|-------------------------|--------------------------|
| Single Potline (Single Potline) | 2.6* | 3.6 |
| Two-Potline Avg. (West Plant) | 2.6 | 3.2 |
| Three-Potline Avg. (East Plant) | 2.5 | 3.0 |
| Five-Potline Avg. (Entire Plant) | 2.4 | 2.9 |

Plant-Wide Emission Limits for the above sources are based upon the tons of aluminum produced (TAP).

At this point in time, CFAC has indicated that for TF the facility will comply with the five-potline emission limit, and for POM they have selected the single-potline emission limit. CFAC may elect to satisfy an alternative scheme identified by the above table (Table C of the MACT Quick Reference Guide (Appendix F)), and request to change their IP to reflect their new choice of emission limits. IP changes must be submitted to the Department for approval prior to implementation.

On June 14, 2000, CFAC faxed a notification to the Department that they would like to change from the single potline emission limit for POM, to the five-potline emission limit, or 2.9 lb/TAP, for POM. CFAC will be required to submit an updated IP, indicating their new POM emission limit selection, for approval, to the Department.

The IP (CFAC's MACT Implementation Plan (Appendix E)), described above, includes a testing plan that CFAC will be employing to demonstrate compliance with the above MACT emission limits, as well as the emission control device operating parameters that are to be monitored.

Permit #2655-05 imposes the following additional emission limitations:

1. 2.6-lb TF / TAP single-potline emission limit (as opposed to the 2.7 MACT single-line requirement);
2. 20% opacity limit for the Primary Control System (Dry Alumina Scrubbers), EU024-EU033; the potroom/potline roof monitors, EU034-EU038, are subject to a 10% opacity limit;
3. 0.02 gr/dscf requirement for EU008 through EU014; and
4. POM emissions controlled from EU015 and EU016 by a Dry Coke Scrubber.

EU024-EU038 are expressly excluded from the Process Weight Rule by ARM 17.8.310(3)(a).

All remaining emission units (EU's), at a minimum, are subject to Generally Applicable Requirements: ARM 17.8.304, 17.8.308, 17.8.309, 17.8.310, 17.8.322, 17.8.324, 17.8.1212, and 17.8.1207.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, record keeping, reporting, and compliance certification sufficient to assure compliance, do not require the permit to impose the same level of rigor for all emission units. Furthermore, it does not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for a insignificant emission unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

The permit includes periodic monitoring or record keeping for each applicable requirement. The information obtained from the monitoring and record keeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

EU001 – EU007 Material Handling Emitting Units with Baghouses (III.B)

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|--------------------------------------|---------------------------------------|
| EU001 - Ball Mill North - MH01 | EU005 - East Alumina Unloading - MH07 |
| EU002 - Ball Mill South - MH02 | EU006 - East Conveyor Storage - MH08 |
| EU003 - Coke Silo - MH04 | EU007 - West Alumina Unloading - MH09 |
| EU004 - East Alumina Elevator - MH06 | |

EU001-EU007 are subject to the generally applicable requirements of III.A, as well as the inspection and maintenance requirements in the Pollution Control Device Inspection & Maintenance Plan (Appendix I), of this operating permit. The potential emissions from these baghouses are such that they do not require a frequent testing schedule; therefore, testing is scheduled "as required" by the Department.

The Department has confidence that the material handling baghouses identified above are providing good control of particulate and opacity emissions when CFAC employs a Pollution Control Device Inspection & Maintenance Plan (I & M plan) (Appendix I). One component of the I & M plan is a weekly visual survey to determine what the visible emissions of the various emission units are. The I & M plan also establishes a routine of scheduled maintenance and record keeping. In summary, the Department has determined that the implementation and continued use of a baghouse I & M plan substantially assures compliance with the opacity and particulate emission limits.

EU008 - EU014 Emitting Units with Baghouses & Grain Loading Restrictions (III.C)

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|--|--|
| EU008 - Anode Dust Control System - MH03 | EU012 - Treatment of Aluminum Crucibles - CO10 |
| EU009 - Coke Unloading - MH05 | EU013 - Pin Cleaning - West Plant - CR07 |
| EU010 - West Conveyor Storage - MH10 | EU014 - Pin Cleaning - East Plant - CR07a |
| EU011 - Potline Sweeping AR04 | |

EU008-EU014 are subject to a 0.02 gr/dscf requirement (MAQP #2655), as well as the generally applicable requirements of III.A. These material handling baghouses are subject to the I & M requirements of Appendix I. The potential emissions from these baghouses are such that they do not require a frequent testing schedule to demonstrate compliance with their emission limits; therefore, the testing frequency is "as required" by the Department. The Department has determined that the material handling baghouses identified above are providing good control of particulate and opacity emissions when CFAC employs a baghouse I & M plan, and that implementation of an I & M plan substantially assures compliance with those limits.

EU015 - EU019 Paste Plant Emitting Units with Baghouses (III.D)

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|-------------------------------------|----------------------------------|
| EU015 - Paste Plant Extruder - PP01 | EU016 - Paste Plant Mixer - PP02 |
| EU017 - Pinhole Paste Drying - PP03 | |

The Paste Plant Extruder (EU015) and the Paste Plant Mixer (EU016) are provided emission control by the Paste Plant Dry Coke Scrubber, which replaced a wet scrubbing system as part of the facility's effort to comply with the Aluminum MACT. The MACT and preconstruction permit requires that the coke scrubber operate whenever the Paste Plant is operating, and that operating parameters are monitored and logged on a daily basis. As required by the Department, CFAC shall perform a semi-annual Method 9 test to demonstrate compliance with the opacity limitation on the dry coke scrubber.

If the dry coke scrubber operating parameters (as defined in the CFAC MACT IP) are exceeded, CFAC must initiate corrective actions. Similarly, a daily visual survey must be performed on the emissions from the scrubber stack, and excessive emissions are to be logged and corrective actions initiated. 40 CFR 63.848 (f) - (i) requires that CFAC monitor and record operating parameter exceedances, and that the 7th exceedance during a semi-annual period (plus each additional exceedance after the 7th, but only one exceedance for any given 24-hour period) shall be reported as a violation.

EU018 - Pitch Storage Tanks - PP04 (III.E) & EU019 - Paste Plant Oil Heating System - PP05 (III.F)

EU018 and EU019 are subject to the generally applicable requirements of this operating permit, specifically ARM 17.8.304(1) & (2). The opacity limitation for the condensation tower (vent) on the pitch storage tanks (EU018) is 20%, while the opacity limitation on the Paste Plant Oil Heating System (EU019) is 40%. New Pitch storage tanks have additional requirements imposed by the Aluminum MACT, which this exiting pitch storage tank is not subject to. Similarly, the Paste Plant Oil Heating System is not addressed by the MACT, nor are there any applicable requirements, other than generally applicable requirements, that this emission unit is subject to. It is unlikely that either of these units will exceed their opacity limitations; therefore, annual certification and semi-annual reporting are adequate to demonstrate compliance.

EU020 - EU023 Primary Scrubber System Alumina Transfer Emitting Units (III.G)

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|---|---|
| EU020 - East Plant Dry Scrubber Alumina Transfer (North) - AR01 | EU022 - West Plant Dry Scrubber Alumina Transfer (North) - AR06 |
| EU021 - East Plant Dry Scrubber Alumina Transfer (South) - AR02 | EU023 - West Plant Dry Scrubber Alumina Transfer (South) - AR07 |

The primary scrubbing system alumina transfer baghouses above are subject to the generally applicable requirements: ARM 17.8.304(2), 20% opacity, and ARM 17.8.310, particulate matter, based upon process weight. The capacity of these baghouses is such that their potential emissions are below the threshold that would require periodic testing; therefore, the compliance demonstration will be testing “as required” by the Department. However, the Department is also requiring that these emission units be subject to a baghouse I & M plan. The I & M plan (Appendix I) provides assurance that these baghouses operate at their maximum effectiveness.

EU024 - EU033 Primary Gas Collection System Emitting Units (III.H)

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| EU025 - Primary Gas Collection System - West Plant - Scrubber #1 - AR05 | EU030 - Primary Gas Collection System - East Plant - Scrubber #6 - AR05 |
| EU026 - Primary Gas Collection System - West Plant - Scrubber #2- AR05 | EU031 - Primary Gas Collection System - East Plant - Scrubber #7 - AR05 |
| EU027 - Primary Gas Collection System - West Plant - Scrubber #3 - AR05 | EU032 - Primary Gas Collection System - East Plant - Scrubber #8 - AR05 |
| EU028 - Primary Gas Collection System - West Plant - Scrubber #4 - AR05 | EU033 - Primary Gas Collection System - East Plant - Scrubber #9 - AR05 |
| EU029 - Primary Gas Collection System - East Plant - Scrubber #5 - AR05 | EU034 - Primary Gas Collection System - East Plant - Scrubber #10 - AR05 |

EU024-EU033, the 10 Alcoa A398 dry alumina scrubbers that comprise the primary control system, are subject to the requirements of 40 CFR 63, Subpart LL (Aluminum MACT), as well as requirements imposed by CFAC's preconstruction permit (ARM 17.8.315). The primary pollutants for these emission units that are addressed by the aluminum MACT and CFAC's preconstruction permit are Total Fluoride (TF) and POM. The primary control system effectively captures and processes the fluoride gases evolving from each reduction cell (pot). Most of the POM emissions evolve from the anode, and anode related activities; therefore, most POM emissions are predominantly fugitive in nature and are not captured by the primary control system.

The aluminum MACT provides a mechanism for CFAC to average the emissions from their potlines, which provides more operational flexibility to the facility. However, whether averaging the two lines of the West plant, the three lines of the East Plant, or all five lines for the entire plant, each averaging scenario imposes a successively more restrictive emission limit for both TF and POM. The rules for emission averaging are described in Subpart LL, and CFAC was required to submit an IP describing how CFAC would satisfy the

requirements of the MACT (Appendix E of this operating permit) before the facility was permitted to average their emissions. CFAC's MACT IP was reviewed by the Department and the US EPA, and underwent several revisions. The current IP version states that the facility was not going to average POM emissions at the current time; however, they elected to average the TF emissions for all five potlines.

ARM 17.8.310(a) specifically excludes the application of the process weight rule to the particulate matter emitted from the reduction cells of a primary aluminum reduction plant. Therefore, excluding opacity, the emission limit (Table C, Appendix F) specifies the TF and POM emission limits necessary for CFAC to satisfy both the MACT requirements for VSS2 category facilities and their existing preconstruction permit requirements. If CFAC demonstrates compliance with the limits specified by Table C, then they will have satisfied both the operating permit and the preconstruction permit limits. The primary control system is subject to a 20% opacity limitation, and CFAC must perform daily visual surveys for opacity. Similarly, CFAC must monitor the operating parameters of the primary control system, and if parameter exceedances occur, take corrective action as prescribed in their Startup, Shutdown, and Malfunction Plan (SSM), which is Appendix G of this operating permit.

To demonstrate compliance with the Table C emission limits for TF and POM, CFAC must determine the emissions from each potline roof (sampling from the Method 14 Manifold systems) and from the primary control system (dry alumina scrubbers), and calculate the total emissions from each potline for both pollutants. The primary control system (there are two at CFAC: West Plant and East Plant) must be tested once annually for both TF and POM; CFAC will use the test results to maintain a 12-month rolling average of TF emissions from the primary control system, and a quarterly average POM emission. Testing the secondary emissions, those emissions exiting from the potroom roofs, is performed with a much higher frequency; a minimum of three runs per month for TF and one run per month for POM from the Method 14 manifold systems. An important distinction between TF and POM emissions is the averaging periods; TF is a monthly average, while POM is a quarterly average.

Details of the operating permit and MACT testing and reporting requirements are lengthy, and the operating permit specifies what those requirements are. The quarterly reporting provided to the Department by CFAC will allow the facility and the Department to determine CFAC's compliance with any of the TF and POM emission limits defined by Table C. Also, on a quarterly basis, CFAC must report their compliance status with the permit and MACT requirements, including the number of operating parameter exceedances.

EU034 - EU038 Potline Roof Vent Emitting Units (III.I)

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|---|---|
| EU034 - Potline #1 Roof Vent-West Plant - AR03 | EU037 - Potline #4 Roof Vent- East Plant - AR03 |
| EU035 - Potline #2 Roof Vent-West Plant - AR03 | EU038 - Potline #5 Roof Vent- East Plant - AR03 |
| EU036 - Potline #3 Roof Vent- East Plant - AR03 | |

The potline roof monitors (roof vents) are subject to the requirements of 40 CFR Part 63, Subpart LL (Aluminum MACT), as well as the requirements of CFAC's preconstruction permit (ARM 17.8.315). Since the MACT emission limits for TF and POM apply to (are imposed upon) all emissions from the reduction cells that comprise the potlines, the total emissions from aluminum production at CFAC must be determined from both the primary control system and from the potline roofs.

CFAC installed an EPA-approved manifold system (Method 14 Manifolds) for each of their five potlines. The manifolds are intended to draw a representative sample of potroom fugitive emissions (secondary emissions) from the potline roof monitors down to an accessible sampling location. The Method 14 duct has two sampling ports at 90° from each other, similar to the port configuration on any exhaust stack. As with the primary control system, these manifold ducts must be sampled for both TF and POM emissions.

As with the primary control system at CFAC, ARM 17.8.310(a) specifically excludes application of the process weight rule to determine a particulate matter emission limit for the particulate emissions from of the potline roofs. The potline roofs are subject to a 10% opacity limitation, and CFAC must perform daily visual surveys, as well as quarterly Method 9 tests, as described by the procedure proposed by CFAC in Appendix H of the operating permit (OP2655-02).

CFAC initially proposed to perform Method 9 tests on potrooms 1 and 10, suggesting that those two potrooms are representative of the West and East Plants, to demonstrate compliance with the 10% opacity limit. However, in order for CFAC to demonstrate that potrooms 1 and 10 are representative of the entire facility, they would first have been required to demonstrate that all potrooms are operated exactly alike, without significant operation deviations. CFAC would have done this by monitoring operational parameters of the potlines. CFAC has, alternatively, proposed a procedure (Appendix H) to determine the opacity from at least a portion of each of the five potlines.

The emission limit table (Table C, Appendix F) specifies the TF and POM emission limits necessary for CFAC to satisfy both the MACT requirements for VSS2 category facilities, and their existing preconstruction permit requirements. If CFAC demonstrates compliance with the limits specified by Table C, then they will have satisfied both the operating permit and the preconstruction permit limits.

To demonstrate compliance with the Table C emission limits for TF and POM, CFAC must calculate the total emissions from each potline for both pollutants. As stated previously, testing the secondary emissions that exit from the potline roofs is performed with more frequency than for the primary systems; a minimum of three runs per month for TF and one run per month for POM from the Method 14 manifold systems. Again, an important distinction between TF and POM emissions is the averaging periods; TF is a monthly average, while POM is a quarterly average. The test results from all valid test runs must be used to determine compliance with the emission limits.

Details of the operating permit and MACT testing and reporting requirements are lengthy, and the operating permit specifies what those requirements are. The quarterly reporting provided to the Department by CFAC will allow the facility and the Department to determine CFAC's compliance with any of the TF and POM emission limits defined by Table C. Also, on a quarterly basis, CFAC must report their compliance status with the permit and MACT requirements, including the number of operating parameter exceedances.

EU039 - EU043 Casting Furnace Emitting Units (III.J)

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|-----------------------------------|--|
| EU039 - Casting Furnace #3 - CO01 | EU042 - Casting Furnace #7 - CO04 |
| EU040 - Casting Furnace #4 - CO02 | EU043 - Casting Furnace #8 & #9 - CO05 |
| EU041 - Casting Furnace #6 - CO03 | |

The natural gas-fired casting furnaces at CFAC are only subject to generally applicable requirements. Therefore, the compliance demonstration required by this permit for the opacity, particulate matter from fuel combustion, and sulfur in fuel requirements, for their natural gas boilers shall consist of burning only natural gas or LPG. This does not preclude the Department from initiating an enforcement action if a Reference Method test indicates one of the limits is being violated.

EU044 - EU048 Casting Pit Emitting Units (III.K)

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|------------------------------------|------------------------------------|
| EU044 - Casting Pit #3 - CO06 | EU047 - Casting Pit #8 & #9 - CO06 |
| EU045 - Casting Pit #4 - CO06 | EU048 - Dross Handling - CO07 |
| EU046 - Casting Pit #6 & #7 - CO06 | |

All casting is conducted indoors, and the casting pits are subject to the generally applicable requirements of ARM 17.8.304(1) and 310. A Method 9 test shall be performed, as required, to determine compliance with the 40% opacity limit. However, because all casting activities are conducted indoors, Method 9 testing will focus on the visible emissions exiting from openings, vents, or stacks of the casting building(s). Demonstrating compliance with the opacity requirements shall be indicative of "normal operations," and also be indicative of compliance with the particulate matter emission limit.

EU049 - EU050 Aluminum Saw Emitting Units (III.L)

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|--------------------------------|-----------------------------|
| EU049 – Sheet Ingot Saw - CO08 | EU050 – T- Ingot Saw - CO09 |
|--------------------------------|-----------------------------|

EU049-EU050 are subject to the generally applicable requirements of III.A, specifically, ARM 17.8.304(2) and 310. The potential emissions from these saws are such that they do not require a frequent testing schedule; therefore, testing is scheduled as required by the Department.

Both of the aluminum saws above have an aluminum chip control and recovery system that is interlocked with the operation of the saws. The system referred to, for both saws, has a device that acts as a target box, plus a fan and cyclone. Also, each saw has a "bailer" device to form the aluminum chips into a size and shape suitable for introduction back into a furnace. The systems are similar; however, the cyclone of EU049 vents to atmosphere, while EU050 vents indoors. The T-Ingot saw control system also has an alternate operational configuration that allows a filter medium to be placed between the cyclone and target box, which is an integral part of the target box. When this system is in the "filter" configuration, it bypasses the cyclone, but still vents indoors.

Because the aluminum saws cannot run without their control and recovery systems also running, and both saws are also operated within buildings, particulate emissions from the aluminum saws (aluminum chips and dust) are effectively controlled. Particulate emissions from material handling cyclones are very consistent, and the Department is confident that testing as required is sufficient to demonstrate continued compliance with opacity and particulate limits.

EU051 – Sandblasting Activities - CR01 (III.M)

The sandblasting activities are associated with maintenance work being performed, and is conducted outdoors. As such, these activities are subject to a 20% opacity limitation. CFAC shall conduct a weekly survey of visible emissions from sandblasting activities and, if excessive fugitive emissions are identified by the visual survey, CFAC must initiate efforts to minimize or curtail the emissions. Also, as required by the Department, CFAC shall perform a Method 9 test. CFAC is not required to perform monitoring or testing to demonstrate compliance with the particulate matter emission limit.

EU052 – Lectromelt Furnace Emitting Unit - CR03 (III.N)

The Lectromelt Furnace is currently controlled by a wet scrubber; however, CFAC has recently (June 7, 2000) provided a de minimis notification indicating that the scrubber is being replaced by a 13,000-ACFM baghouse with an estimated exhaust grain loading of 0.02 gr/dscf. The baghouse will be subject to generally applicable requirements, as well as the Pollution Control Device Inspection & Maintenance Plan (I & M Plan) (Appendix I). The potential emissions from this baghouse are such that it does not require a frequent testing schedule, therefore testing is scheduled as required by the Department.

The Department has confidence that the baghouse identified above will provide good control of particulate and opacity emissions when CFAC employs a baghouse I & M plan (Appendix I). One component of the I & M plan is a weekly visual survey. The I & M plan also establishes a routine of scheduled maintenance and record keeping. In summary, the Department has determined that the implementation and continued use of a baghouse I & M plan substantially assures compliance with the opacity and particulate emission limits.

EU053 – Rod Mill/Material Storage/Bath Crushing Emitting Unit - CR04 (III.O)

The Rod Mill Building (this building formerly housed a rod mill) is now used for material storage, and the baghouse is used to control emissions generated as a result of material handling. The potential emissions from this baghouse are such that it does not require a frequent testing schedule, therefore testing is scheduled as required by the Department.

The Department has confidence that a material handling baghouse is providing good control of particulate and opacity emissions when CFAC employs a baghouse I & M plan. One component of an I & M plan is a weekly visual survey to determine what the visible emissions are from the emission unit. The I & M plan also establishes a routine of scheduled maintenance plus record keeping. In summary, the Department has determined that the implementation and continued use of a baghouse I & M plan substantially assures compliance with the opacity and particulate emission limits.

EU054 – EU062 Natural Gas Boiler Emitting Units (III.P)

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|---------------------------------------|--------------------------------------|
| EU054 - Change House Boiler #1 - MP01 | EU059 - Paste Plant Boiler #1 - MP11 |
| EU055 - Change House Boiler #2 - MP02 | EU060 - Paste Plant Boiler #2 - MP12 |
| EU056 - Lab Boiler #1 - MP07 | EU061 - Warehouse Boiler #1 - MP16 |
| EU057 - Machine Shop Boiler #1 - MP08 | EU062 - Warehouse Boiler #2 - MP17 |
| EU058 - Machine Shop Boiler #2 - MP09 | |

The Department determined that natural gas combustion is sufficient to demonstrate compliance with the opacity, particulate matter, and sulfur in fuel limits for these emission units. The age or capacity of these units is such that NSPS requirements are not applicable. This compliance demonstration does not preclude the Department from initiating an enforcement action if testing indicates that an emission limit is exceeded.

EU063 – Truck and Equipment Fugitive Emissions / Haul Road Emissions – MP05 (III.Q)

CFAC must perform Method 9 tests, as required, to monitor opacity due to truck and equipment activity. CFAC must also exercise reasonable precautions such as road maintenance, treatment with water, or dust suppressant, and reduced truck and equipment speeds to control or mitigate emissions. The Department determined that Method 9 testing, plus exercising reasonable precautions, will assure compliance with the opacity limit.

EU064 – Gasoline Storage (Tank) Emitting Unit – MP04 (III.R)

The capacity of this storage tank is such that the only requirements it is subject to are opacity (ARM 17.8.304(2)), and use of a submerged fill pipe (or instead of a submerged fill pipe, installation and use of a vapor loss control device (ARM 17.8.106)). The Department determined that a demonstration of compliance shall be a Method 9 test as required.

EU065 – Sow Casting Line

All casting is conducted indoors, and the casting pits are subject to the generally applicable requirements of ARM 17.8.304(1) and 310. A Method 9 test shall be performed, as required, to determine compliance with the 40% opacity limit. However, because all casting activities are conducted indoors, Method 9 testing will focus on the visible emissions exiting from openings, vents, or stacks of the casting building(s). Demonstrating compliance with the opacity requirements shall be indicative of "normal operations," and also be indicative of compliance with the particulate matter emission limit.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

D. Record keeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emission unit, and Section V of the operating permit, "General Conditions," explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the *The Daily Inter Lake* newspaper on or before January 23, 2008. The Department provided a 30-day public comment period on the draft operating permit from January 23, 2008 to February 22, 2008. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by February 22, 2008 will be summarized, along with the Department’s responses, in the following table. All comments received during the public comment period will be promptly forwarded to CFAC so they may have an opportunity to respond to these comments as well. There were no public comments on Draft Permit #2655-02.

G. Draft Permit Comments

Summary of Permittee Comments

| Permit Reference | Comment | Department Response |
|--|---|--|
| Section II Summary of Emitting Unit | CFAC requested the name of emitting unit EU019 be changed from “Therminol Oil Heating System – PP05” to “Paste Plant Oil Heating System – PP05”. CFAC discontinued the use of Therminol brand oil in this system and is using a mineral oil. | The Department made the change as requested. |
| Section III.D.6 - Compliance Demonstration for Paste Plant Dry Coke Scrubber | Paragraph D.6 requires once per week visual surveys of the Paste Plant Dry Coke Scrubber for any sources of excessive emissions. This is different from the requirement in 40 CFR 63.848(g), Visible Emissions, which requires daily inspection of exhaust stacks for evidence of visible emissions indicating abnormal operations. CFAC requests the first sentence of this condition be changed to: “Once per calendar week during daylight hours, CFAC shall visually survey the Paste Plant Dry Coke Scrubber exhaust stack for evidence of visible emissions indicating abnormal operations.” Also, the table of conditions in section D, states “daily” visual surveys instead of “weekly” visual surveys referred to in D.6. | The Department made this change in error, and has changed the language back to coincide with 40 CFR 63.848(g). |
| Section III.D.6 - Compliance Demonstration for Paste Plant Dry Coke Scrubber | Paragraph D.6 requires “The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed.” CFAC requests that this condition be changed to: “The person conducting the survey does not have to be an EPA Method 9 | The Department requires Method 9 observers to be EPA Method 9 certified a minimum of once every two years. |

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| | certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed, or the individual must have completed an MDEQ-approved opacity observer training session within the previous two years of the visual survey being performed. This opacity observer training session may be conducted in-house by CFAC's certified method 9 observers. | |
| Section III.D.17.d | To be consistent with D.5, the reference to "daily visual surveys" should be "weekly visual surveys". | The reporting requirement will remain the same as per comments above. |
| Section III.H.2 Conditions for Primary Gas Collection System Emitting Units | This condition does not agree with ARM 17.8.331 which states the fluoride emission limit is 2.6 lb TF/ton of aluminum produced (or 1.3 kg TF/ton aluminum produced) | The Department made this change in error and has corrected the limits to coincide with ARM 17.8.331. |
| Section III.H.4: Compliance Demonstration for Primary Gas Collection System Emitting Units | This paragraph states that "CFAC shall operate the Scrubbers on the Primary Gas Collection System at all times...". CFAC requests this requirement be changed to: "CFAC shall operate the Scrubbers on the Primary Gas Collection System at all times, with the exception of periods of malfunction and MDEQ-approved maintenance periods." | The Department revised the language as appropriate. |
| Section III.H.6 Compliance Demonstration for Primary Gas Collection System Emitting Units | Paragraph H.6 requires once per week visual surveys of the Primary Gas Collection System Emitting Units for any sources of excessive emissions. This is different from the requirement in 40 CFR 63.848(g), Visible Emissions, which requires daily inspection of exhaust stacks for evidence of visible emissions indicating abnormal operations. CFAC requests the first sentence of this condition be changed to: "Once per calendar week during daylight hours, CFAC shall visually survey the Primary Gas Collection System Emitting Units exhaust stack for evidence of visible emissions indicating abnormal operations." Also, the table of conditions in section D, states "daily" visual surveys instead of "weekly" visual surveys referred to in H.6. | The Department made this change in error, and has changed the language back to coincide with 40 CFR 63.848(g). |
| Section III.H.6 compliance Demonstration for Primary Gas Collection System Emitting Units | Paragraph H.6 requires "The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed." CFAC requests that this condition be changed to: "The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous | The Department requires Method 9 observers to be EPA Method 9 certified a minimum of once every two years. |

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| | two years of the visual survey being performed, or the individual must have completed an MDEQ-approved opacity observer training session within the previous two years of the visual survey being performed. This opacity observer training session may be conducted in-house by CFAC's certified method 9 observers. | |
| Section III.H.17.h | To be consistent with H.6, the reference to "daily visual surveys" should be "weekly visual surveys". | The table will remain the same as per comments above. |
| Section III.I.3 Condition for Potline Roof Vent Emitting Units | The POM emission limit stated in this condition needs to be revised to 2.85 kg POM/Mg aluminum produced (5.7 lb POM/ton aluminum produced) to reflect current emission limits. | The condition will remain the same as per ARM 17.8.331 and ARM 17.8.332. |
| Section III.I.5 Condition for Potline Roof Vent Emitting Units | Paragraph I.5 requires "The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed." CFAC requests that this condition be changed to: "The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed, or the individual must have completed an MDEQ-approved opacity observer training session within the previous two years of the visual survey being performed. This opacity observer training session may be conducted in-house by CFAC's certified method 9 observers. | The Department requires Method 9 observers to be EPA Method 9 certified a minimum of once every two years. |
| Section III.I.9 Condition for Potline Roof Vent Emitting Units | This condition requires on-site records of daily visible emissions surveys. To be consistent with I.5, this condition should require on-site records of weekly visible emissions surveys. | The Department determined that condition I.5 was changed from "daily visual surveys" to "weekly visual surveys" in error and has corrected that error. Therefore, condition I.9 will remain the same. |
| Section III.I.14.j | The reference to "daily visual surveys" should be changed to "weekly visual surveys" to be consistent with Paragraph I.5. | The Department determined that condition I.5 was changed from "daily visual surveys" to "weekly visual surveys" in error and has corrected that error. Therefore, condition I.14 will remain the same. |
| Section III.J.4 | The reference to "facility's natural gas boilers" should be changed to "facility's natural gas casting furnaces". | The Department made the change as requested. |
| Section III.J.5 | In the second sentence, the reference to "boiler" should be changed to "furnace". | The Department made the change as requested. |
| Section III.K.6 | In the second sentence, the reference to "boiler" should be changed to "casting pit". | The Department made the change as requested. |
| Section III.M.5 Condition for Sandblasting Activities | Paragraph M.5 requires "The person conducting the survey does not have to be an EPA Method 9 certified observer. | The Department requires Method 9 observers to be EPA Method 9 certified a minimum of once every two years. |

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| | <p>However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed.” CFAC requests that this condition be changed to: “The person conducting the survey does not have to be an EPA Method 9 certified observer. However, the individual must have been certified as a Method 9 observer within the previous two years of the visual survey being performed, or the individual must have completed an MDEQ-approved opacity observer training session within the previous two years of the visual survey being performed. This opacity observer training session may be conducted in-house by CFAC’s certified method 9 observers.</p> | |
| 8.5 | <p>In the second sentence, the reference to “boiler” should be changed to “sandblasting”</p> | <p>The Department made the change as requested.</p> |
| Section III.R.6 | <p>CFAC requests that the R.6 record keeping and R.9.b reporting requirements be removed from the permit. The submerged fill pipe is permanently installed and will never be removed, unless the entire underground storage tank is replaced.</p> | <p>The record keeping and reporting requirements will remain in the permit. Since the submerged fill pipe is permanently installed, CFAC will not be required to keep additional records or submit additional reports.</p> |
| Section III.S.6 | <p>In the second sentence, “boiler” should be changed to “sow casting”</p> | <p>The Department made the change as requested.</p> |
| Section V.D. Monitoring, Record keeping, and Reporting Requirements (3): | <p>The reference to the reporting period “July 1 through August 15” should be July 1 through December 31”</p> | <p>The Department made the change as appropriate.</p> |
| Appendix H CFAC POM Compliance Schedule | <p>CFAC requests this appendix H be removed from the permit since CFAC has achieved compliance and this schedule is no longer required.</p> | <p>The Department agrees that the requirements of Appendix H have been satisfied. Therefore, Appendix H has been removed from the permit.</p> |
| De minimum letter | <p>CFAC submitted a de minimus emitting unit letter dated 1/21/08 to MDEQ describing a crucible cleaning system which CFAC is installing in the facility. This emitting unit needs to be added to the operating permit.</p> | <p>This letter was received by the Department on 1/24/08, a day after the Draft Operating Permit was issued. The Department has not determined if the crucible cleaning system falls under the de minimum rule, and will need additional information for further review. Therefore, the Department did not incorporate the crucible cleaning system in the operating permit.</p> |
| EU053 | <p>CFAC requests that emitting unit EU053 be re-named Rod Mill/Material Storage/Bath Crushing. CFAC plans to install a bath crusher at the Rod Mill and use the existing baghouse for emission control. CFAC will be submitting additional information in the near future.</p> | <p>The Department made the change as requested.</p> |

SECTION IV. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

CFAC is subject to the requirements of 40 CFR 63, Subpart LL, promulgated on October 7, 1997 and 40 CFR 63, Subpart RRR, promulgated on March 23, 2000.

B. NESHAP Standards

As of the date of issuance of this permit, the only NESHAP standard that this facility is subject to is 40 CFR Part 61, Subpart M, "National Emission Standards for Hazardous Air Pollutants for Demolition and Renovation;" this standard is applicable to any asbestos project. The Department is unaware of any future requirement that may be promulgated during the permit term for which this facility must comply.

C. NSPS Standards

CFAC was constructed prior to promulgation of 40 CFR Part 60, Subpart S, Standards of Performance for Primary Aluminum Reduction Plants; therefore, no NSPS Standards are currently applicable.

D. Risk Management Plan

As of March 12, 2003, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan.

Within three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or the date on which a regulated substance is first present in more than a threshold quantity, CFAC must comply with the requirements of 40 CFR 68.