Georgia Department of Natural Resources
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Chris Clark, Commissioner
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NARRATIVE

TO: Manny Patel

FROM: Ginger Payment

DATE: July 8, 2010

Facility Name:	**VMC Specialty Alloys**
AIRS No.:	015-00115
Location:	Adairsville, GA (Bartow County)
Application #:	19711
Date of Application:	May 23, 2010

Background Information

VMC Specialty Alloys is a new facility which will be located at 800 Martin Luther King Jr. Drive in Adairsville (Bartow County).

Purpose of Application

Application No. 19711 was submitted on May 23, 2010 to request the construction of a facility to treat and recycle scrap aluminum and aluminum alloys by melting and casting into billets and ingots. The facility has notified the Division that the scrap will be clean charge. A public advisory (PA0610-1) was issued June 1, 2010 and expired July 2, 2010.

The scrap aluminum will be loaded into the tilting metal melting furnaces. After the furnace is filled, the charging is stopped and the alloy is checked for product quality and then the ingot casting is started. Chlorine may be used to remove impurities from the molten aluminum. After the melting and casting operations, billets are directed to one of the homogenizing furnaces for heat treatment. The homogenizing furnaces operate at a constant temperature during the setting process to maintain uniformity throughout the cast billets. No aluminum melting occurs at the homogenizing furnaces.

Equipment List

Emission Units			Associated Control Devices	
Source Code	**Description**	**Installation Date**	**Source Code**	**Description**
FCE1	Melting Furnace 1	2010*	--	--
FCE2	Melting Furnace 2	2010*	--	--
HO1	Homogenizing Furnace 1	2010*	--	--
HO2	Homogenizing Furnace 2	2010*	--	--

*proposed within current application

Each 60,000 pound melting furnace is natural gas fired with a maximum heat input capacity of 16 MMBTU per hour. Each has ultra-low NOx burners (15.2 MMBTU/hr) and an auxiliary burner (0.8 MMBTU/hr).

Each 110,000 pound homogenizing furnace is natural gas fired with a maximum heat input capacity of 12.4 MMBTU per hour consisting of two zones per furnace. Each zone has one 4.9 MMBTU/hr burner and one 1.3 MMBTU/hr burner.

Emissions Summary

All emissions, except NOx emissions, from the combustion of natural gas in each melting furnace and each homogenizing furnace are based on the maximum heat input rating of each furnace and AP-42 emission factors. The emission factor for NOx emissions is based on manufacturer's specifications.

Particulate matter emissions include emissions from natural gas combustion and emissions from smelting, pouring and casting. A source test on a similar furnace provided the emission rate for smelting operations. AP-42 emission factors were used to calculate the emissions from pouring and casting.

Chlorine is used in the process to remove impurities in the metals. The chlorine is injected below the metal and promotes separation of the aluminum oxide dross layer that forms on the surface of the melt from the molten metal. It is believed that the chlorine is fully consumed as the drossing fluxes react with aluminum oxides to recover the metal intermingled in the dross layer and often results in the formation of zinc chloride in the dross. Hydrochloric acid emissions of are not expected as a result of the operation of the melting furnaces.

Because the facility will be operating 24 hours per day, seven days per week, the actual emissions will also approximately equal the potential emissions.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions
PM	5.698
NOx	15.987
SO_2	0.140
CO	8.287
VOC	1.664
Max. Individual HAP	0.0034
Total HAP	0.169

Regulatory Applicability

The facility will be subject to Georgia Rule (b) for Visible Emissions and Georgia Rule (e) for Particulate Emissions from Manufacturing Processes.

The facility will avoid the requirements of 40 CFR 63 Subpart RRR - *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production* by limiting the aluminum and aluminum alloys treated at the facility to only clean charge.

The furnaces will be limited to natural gas; therefore avoiding the requirements of Georgia Rule (g) for Sulfur Dioxide.

The furnaces are not subject to Georgia Rule (d) – Fuel Burning Equipment or Georgia Rule (lll) – NOx Emissions from Fuel Burning Equipment because they do not meet the definition of fuel burning equipment.

Permit Conditions

Condition 2.1 limits the fuel combusted in the furnaces to natural gas in order to avoid Georgia Rule (g).
Condition 2.2 subjects the facility to Georgia Rule (b).
Condition 2.3 subjects the facility to Georgia Rule (e).
Condition 2.4 limits the aluminum and aluminum alloys treated at the facility to only clean charge in order to avoid the requirements of 40 CFR 63 Subpart RRR.
Condition 2.5 requires the facility to develop and submit a Scrap Metal Inspection Program. This will ensure that all metal processed at the facility is clean charge.

Condition 7.1 requires the facility to maintain all records for the Scrap Metal Inspection Program including any revisions.
Condition 7.2 requires the facility to maintain all records of natural gas usage at the facility.

Toxic Impact Assessment

A toxic impact assessment was not performed for this application because the scrap aluminum will be clean and the only emissions are the combustion of natural gas in the furnaces.

Summary & Recommendations

I recommend issuance of Permit No. 3341-015-0115-B-01-0 to VMC Specialty Alloys for the operation of a facility to treat and recycle scrap aluminum and aluminum alloys. The facility is located at 800 Martin Luther King Jr. Drive in Adairsville (Bartow County). This facility will be a minor source. By limiting the scrap metal to only clean charge, the facility will avoid the requirements for 40 CFR 63 Subpart RRR - *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*. A public advisory was issued and expired July 2, 2010.