GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Air Protection Branch
4244 International Parkway
Suite 120
Atlanta, Georgia 30354
404-363-7000

NARRATIVE

TO: Jeng-Hon Su

FROM: Susan Jenkins

DATE: March 6, 2023

Facility Name:	**VMC Specialty Alloys**
AIRS No.:	015-00115
Location:	Adairsville, GA (Bartow County)
Application #:	28713
Date of Application:	January 20, 2023

Background Information

VMC Specialty Alloys (hereinafter as "facility") is an existing facility which treats and recycles scrap aluminum and aluminum alloys by melting and casting the metal into billets and ingots. The facility is located at 800 Martin Luther King Jr. Drive in Adairsville (Bartow County). The facility was issued Permit No. 3341-015-0115-S-03-0 on May 3, 2019, for the operation of the facility and for the construction and operation of two aluminum homogenizing furnaces, two melting furnaces and one preheater.

The scrap aluminum is 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. The aluminum and aluminum alloys treated at the facility are limited to clean charge in order to avoid the requirements of 40 CFR 63 Subpart RRR – *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*.

Purpose of Application

Application No. 28713 was received by the Division on January 31, 2023. The application requested the following:

- Construction and operation of two metal melting furnaces (FCE12 and FCE13): Each furnace is described as *Thorpe Technologies 60,000 pound tilting aluminum melting furnace, natural gas-fired, consisting of two alternating Bloom 1150-100 ultra low NOx regenerative burners with a total combined maximum output of 15.2 MMBtu/hr*;

- Construction and operation of two homogenizing furnaces (HO12 and HO13): Each furnace is described as *Thorpe Technologies 200,000 pound homogenizing furnace, natural gas-fired, with a maximum heat input capacity of 12.0 MMBtu/hr, consisting of two 6.0 MMBtu/hr zones, each zone*

containing one Bloom Model 1500080D-L natural gas burner and one Bloom Model 1500-040A-S natural gas burner;

- Construction and operation of a pre-heater (Pre-7) with the following description: *Gold Coast natural gas-fired, heavy duty walk-in pre-heater, with chamber dimensions of 10'-6"W. X 7'-0" L. x 8'-0 H., and overall dimensions of 14'-6"W. X 8'-0" L. x 15'-0 H., with a maximum temperature rating of 500F, heated by one 4.0 MMBtu/hr natural gas fired Eclipse Winnox model WX0400 burner; and*

- Removal of the existing metal melting furnace (ID Nos. FCE1 through FCE11) auxiliary burners.

Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	**Description**	**Installation Date**	**Source Code**	**Description**
FCE1	Melting Furnace 1 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2010	--	--
FCE2	Melting Furnace 2 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2010	--	--
FCE3	Melting Furnace 3 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2012	--	--
FCE4	Melting Furnace 4 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2014	--	--
FCE5	Melting Furnace 5 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2014	--	--
FCE6	Melting Furnace 6 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2015	--	--
FCE7	Melting Furnace 7 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2015	--	--
FCE8	Melting Furnace 8 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2018	--	--
FCE9	Melting Furnace 9 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2018	--	--
FCE10	Melting Furnace 10 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2019	--	--
FCE11	Melting Furnace 11 **(15.2 MMBtu/hr)** ~~(16 MMBtu/hr)~~	2019	--	--
FCE12*	Melting Furnace 12 (15.2 MMBtu/hr)	2023*	--	--
FCE13*	Melting Furnace 13 (15.2 MMBtu/hr)	2023*	--	--
HO1	Homogenizing Furnace 1 (12.4 MMBtu/hr)	2010	--	--
HO2	Homogenizing Furnace 2 (12.4 MMBtu/hr)	2010	--	--
HO3	Homogenizing Furnace 3 (12.4 MMBtu/hr)	2011	--	--

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
HO4	Homogenizing Furnace 4 (12.4 MMBtu/hr)	2012	--	--
HO5	Homogenizing Furnace 5 (12.4 MMBtu/hr)	2014	--	--
HO6	Homogenizing Furnace 6 (12.0 MMBtu/hr)	2015	--	--
HO7	Homogenizing Furnace 7 (12.0 MMBtu/hr)	2018	--	--
HO8	Homogenizing Furnace 8 (12.0 MMBtu/hr)	2018	--	--
HO9	Homogenizing Furnace 9 (12.0 MMBtu/hr)	2018	--	--
HO10	Homogenizing Furnace 10 (12.0 MMBtu/hr)	2019	--	--
HO11	Homogenizing Furnace 11 (12.0 MMBtu/hr)	2019	--	--
HO12*	Homogenizing Furnace 12 (12.0 MMBtu/hr)	2023*	--	--
HO13*	Homogenizing Furnace 13 (12.0 MMBtu/hr)	2023*	--	--
Pre1	Pre-Heater 1 (4 MMBtu/hr)	2014	--	--
Pre2	Pre-Heater 2 (4 MMBtu/hr)	2014	--	--
Pre3	Pre-Heater 3 (4 MMBtu/hr)	2014	--	--
Pre4	Pre-Heater 4 (4 MMBtu/hr)	2015	--	--
Pre5	Pre-Heater 5 (4 MMBtu/hr)	2018	--	--
Pre6	Pre-Heater 6 (4 MMBtu/hr)	2019	--	--
Pre7*	Pre-Heater 7 (4 MMBtu/hr)	2023*	--	--

*proposed within current application

Emissions Summary

The Division reviewed the emissions calculations supplied by the applicant. The Division concurs with the applicant's emissions calculations except for NOx emissions from the pre-heater. The applicant utilized a NOx emission factor of 30 ppm rather than 40.6 ppm, based on testing on December 20, 2018. Use of the revised NOx emission factor does not change the fact that the potential to emit of NOx is less than 100 tpy.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions		
	Before Mod.	After Mod.	Emissions Change
$PM/PM_{10}/PM_{2.5}$	53.57	62.96	9.39
NOx	93.12	<100	<6.88
SO_2	0.84	0.96	0.12
CO	48.77	56.01	7.24

Pollutant	Potential Emissions		
	Before Mod.	After Mod.	Emissions Change
VOC	9.75	11.20	1.45
Max. Individual HAP	0.87	1.00	0.13
Total HAP	1.05	1.16	0.11
Total GHG (if applicable)	180,972	188,555	7,583

Regulatory Applicability

Operations at the facility will remain subject to Georgia Rules 391-3-1-.02(2)(b), (e), and (g) with no changes proposed based on this application. Operations at the facility will continue to not be subject to 40 CFR 63 Subpart RRR by limiting the aluminum and aluminum alloys treated at the facility to only clean charge.

Permit Conditions

No new permit conditions are required for the proposed project. No deletions or revisions of existing permit conditions are required for the proposed project.

Toxic Impact Assessment

A toxic impact assessment was not performed for this application because the scrap aluminum is required to be clean and TAP emissions will only occur from natural gas combustion.

Summary & Recommendations

I recommend issuance of Permit No. 3341-015-0115-S-03-1 to VMC Specialty Alloys for the operation of an aluminum alloying facility and for the construction and operation of metal melting furnaces (FCE12 and FCE13), homogenizing furnaces (HO12 and HO13), and pre-heater (Pre-7). A public advisory was not issued because the potential emissions increases are less than those specified in Georgia Rule 391-3-1-.03(6)(i)3. VMC Specialty Alloys is located at 800 Martin Luther King Jr. Drive in Adairsville (Bartow County). The facility will remain a synthetic minor source for NOx emissions. The SSCP will remain responsible for compliance.

Addendum to Narrative

The Public Notice for 3341-015-0115-S-03-1 began on March 29, 2023 and ended on April 28, 2023. No comments were received from the facility nor EPA Region IV.