APPLICATION FOR RENEWAL OF TITLE V PERMIT V-17-038

CC Metals and Alloys, LLC
1542 North Main Street
Calvert City, Kentucky 42029

Submitted to:

Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality
300 Sower Boulevard
Frankfort, Kentucky 40601

Attn: Ms. Amy Tempus-Doom

Prepared By:

LAN ASSOCIATES, INC.
ENVIRONMENTAL CONSULTING
ENGINEERING
PLANNING & ZONING

200 Malaga Street, Suite 3 • St. Augustine, FL 32084 • Ph: (904) 824-6999 • Fax: (904) 824-0726 • www.lan-fl.com

LAN Ref. #2.3146.36
October 28, 2022

LAN ASSOCIATES, INC.
• ENVIRONMENTAL CONSULTING
• ENGINEERING
• PLANNING & ZONING

APPLICATION FOR RENEWAL OF TITLE V PERMIT V-17-038

CC METALS AND ALLOYS, LLC
CALVERT CITY, KY
LAN Ref. #2.3146.36

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LAN ASSOCIATES, INC.
• ENVIRONMENTAL CONSULTING
• ENGINEERING
• PLANNING & ZONING

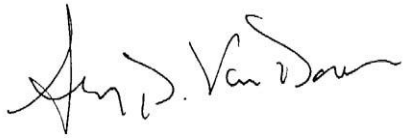
APPLICATION FOR RENEWAL OF TITLE V PERMIT V-17-038

CC METALS AND ALLOYS, LLC
CALVERT CITY, KY

LAN Ref. #2.3146.36

ENGINEER CERTIFICATION

This permit application was prepared under our direction and review. We hereby certify that in our professional judgment, the content of this report meets with industry standards, satisfies the requirements of the Commonwealth of Kentucky, Environmental & Public Protection, and the EPA, and follows generally acceptable engineering principals.



Guy D. VanDoren, P.E.
President
Kentucky PE #20488

Date: October 28, 2022

LAN ASSOCIATES, INC.
• ENVIRONMENTAL CONSULTING
• ENGINEERING
• PLANNING & ZONING

APPLICATION FOR RENEWAL OF TITLE V PERMIT V-17-038

CC METALS AND ALLOYS, LLC
CALVERT CITY, KY

LAN Ref. #2.3146.36

CERTIFICATION BY RESPONSIBLE OFFICIAL

In accordance with 401 KAR 52:020 Section 23, I, certify that, based on information and belief formed after reasonable inquiry, the statements and information contained in the following documents are true, accurate, and complete:

(1) Applications for initial permits, permit revisions, and permit renewals;
(2) Reports;
(3) Compliance Certifications (2021 reporting year previously submitted to KDAQ); and
(4) Emissions certifications (2021 reporting year previously submitted to KDAQ).

Chris Cobb, Plant Manager
CC Metals and Alloys, LLC

Date: October 28, 2022

LAN ASSOCIATES, INC.
• ENVIRONMENTAL CONSULTING
• ENGINEERING
• PLANNING & ZONING

APPLICATION FOR RENEWAL OF TITLE V PERMIT V-17-038

CC METALS AND ALLOYS, LLC
CALVERT CITY, KY
LAN Ref. #2.3146.36

1.0 EXECUTIVE SUMMARY

CC Metals and Alloys, LLC (CCMA) operates a ferroalloy manufacturing facility in Calvert City, Marshall County, KY. CCMA is currently permitted to produce ferrosilicon (FeSi) alloy materials in three existing Electric Arc Furnaces (EAF) and has submitted a significant permit revision application to produce silicomanganese (SiMn) in Furnace #6 (EP 002) and install and operate a new screening/sorting system for finished FeSi product. Primary emission units include the three EAFs; Furnace #6 (EP 002), Furnace #15 (EP 010) and Furnace #16 (EP 011), with associated tapping and lading operation; stirring operation; crushing and sizing operations; casting beds operation; and material and storage operation. Additional units include haul roads, an emergency diesel generator, and various insignificant activities as listed in Permit No. V-17-038. In a pre-application meeting with Kentucky Division for Air Quality (KDAQ) staff, KDAQ agreed to process the significant permit revision application simultaneously with the Title V permit renewal application.

CCMA has prepared this application for to renew the Title V Air Operating Permit V-17-038 in accordance with the requirements of 401 KAR 52:020 Section 12. With this renewal the facility proposes to add two small internal combustion engines to the permit, a 268-hp diesel emergency generator and a 580-hp diesel air compressor. Additionally, the facility is requesting that the equipment addressed in the off-permit change granted in February 2022 be added to the permit as well as the significant permit revision initially submitted in July 2022. Figure 1 presents a facility site map of the existing CCMA facility. Figure 2 is a site plan depicting location of emission units and emission points.

Marshall County is designated as an attainment or unclassified area for all criteria pollutants.[1] A Prevention of Significant Deterioration (PSD) applicability analysis was performed for the facility for all NSR pollutants to determine if any increase was above the "significance" level. CCMA considered the applicability of PSD regulations by comparing the potential emissions from the new units to the Significant Emission Rate (SER) thresholds. As demonstrated in Section 4 Emissions Calculations and Section 5 Regulatory Applicability Analysis, the diesel engines will not be a major modification with respect to PSD. The project emissions from the diesel engines are shown below.

Exhibit 1-1. Net Emission Increase from the Proposed Units

Pollutant	Net Emission Increase (tpy)	PSD/SER (tpy)	PSD Review Required?
NOx	3.68	40	No
CO	14.6	100	No
TOC	5.53	40	No
PM	1.57	25	No
PM10	1.57	15	No
PM2.5	1.57	10	No
SOx	4.45	40	No
Individual HAP	0.0145	N/A	No
Total HAPs	0.0288	N/A	No

[1] United States Environmental Protection Agency (U.S. EPA) Green Book. https://www3.epa.gov/airquality/greenbook/anayo_ky.html,

2.0 INTRODUCTION

CC Metals and Alloys, LLC (CCMA) operates a ferroalloys manufacturing plant in Calvert City, KY (the Facility). CCMA produces ferrosilicon and various ferroalloy specialty products. The production process does not involve combustion of fuels to produce the final product as in metal smelting; rather it is a process of carbon reduction of oxide ores in submerged Electric Arc Furnaces (EAF). CCMA has three furnaces; furnaces #6, rated at approximately 20 MVA, and furnaces #15 and #16 rated at approximately 66 MVA each. Raw charge materials include various ores, gravel, coal, coke, scrap iron, and woodchips are measured, combined, and introduced to the top of the furnaces during the melting operation as required for producing products.

Smelting in an EAF is accomplished by converting electricity to heat. A reduction process occurs at the elevated temperatures created by alternate electric current applied to electrodes causing the current to flow through the charge between the electrical tips. Carbon source-reducing agents are usually in the form of coal and wood chips. High temperatures in the reaction zone cause the carbon source to react with the metal oxides to reduce the ores to base metal.

The molten material is tapped by shooting a hole into the tap location of the furnace. The tap hole is near the hearth level from which the molten mass will be tapped and poured into casting beds. CCMA furnaces are the "open" type but are equipped with the panels that provide some heat barrier and direct the emissions to the furnace hoods and baghouses. Carbon monoxide rising through the furnace charge burns in the area between the charge surface and the capture hood. This substantially increases the volume of gas the containment system must handle. Various alloy materials that are used to make specialty products are produced by adding the appropriate materials in the "tapping" ladles. Primary emission units include three submerged electric arc furnaces with associated tapping and lading operation; stirring operation; crushing and sizing operations; casting beds operation; and material and storage operation. Additional units include haul roads, an emergency diesel generator, and various insignificant activities as listed in Permit No. V-17-038.

3.0 PROJECT DESCRIPTION

CCMA has added two diesel engines to the facility since the last Title V permit. The diesel air compressor was added in March 2021 and the 268 hp emergency diesel generator was added in October 2022. The emergency diesel generator will act as an emergency power source for Furnace #6 cooling tower. The diesel air compressor is used as backup for the main air compressor (electrically-powered) when blowing down a furnace.

3.1 PROPOSED UNITS

- 268 hp Emergency Diesel Generator (EP 036)
- Diesel Air Compressor (EP 037)

4.0 PROJECT EMISSIONS CALCULATIONS

Project emission calculations were conducted for two purposes: to determine if PSD review would be required and to provide a full summary of emissions as a result of the Project. Potential to Emit, Projected Actual Emissions, and Net Emission Increase were calculated for the purpose of PSD review applicability. CCMA determined that there are six regulated NSR pollutants under the definition of "significant" (401 KAR 51:001 Section 1 (218)) that apply to Project: carbon monoxide, nitrogen oxides, sulfur dioxide, PM2.5, PM10, PM, ozone and lead. Emissions of these pollutants were part of the PSD applicability review. Emission calculations were conducted on all project sources for these pollutants.

Projected Actual Emissions were calculated as part of the PSD review and to summarize all emissions from the Project. Pollutants include the six regulated NSR pollutants, TOC, and speciated HAPs including PAHs. The six regulated NSR pollutants were utilized in PSD review applicability. Emissions were calculated for all emission units in the Project.

4.1 POTENTIAL TO EMIT

Potential to Emit was calculated for the 268 hp emergency diesel generator and the diesel air compressor. The PTE for the emergency generator is limited by 40 CFR 60.4211(f) to 100 hours per year of non-emergency operation; however, the PTE of the emergency generator was calculated based on 500 operation hours to account for emergency operation. The PTE for the diesel air compressor was calculated based on 8,760 operating hours as there is no regulatory limit on the hours of operation. PTE calculations are included in Tables 1, 2, and 3.

Exhibit 4-1. Potential to Emit

Emission Unit	NOx	CO	TOC	PM	PM10	PM2.5	SOx	Single HAP	Total HAPs
	ton/yr	*ton/yr*	*ton/yr*	*ton/yr*	*ton/yr*	*ton/yr*	*ton/yr*	*ton/yr*	*ton/yr*
268 hp Emergency Diesel Generator	2.24	0.481	0.182	0.0518	0.0518	0.0518	0.147	4.77×10^{-4}	9.51×10^{-4}
Diesel Air Compressor	1.44	14.1	5.34	1.51	1.51	1.51	4.30	0.0140	0.0279
Total	**3.68**	**14.6**	**5.53**	**1.57**	**1.57**	**1.57**	**4.45**	**0.0145**	**0.0288**

4.2 PSD APPLICABILITY ANALYSIS DETERMINATION

The Net Emission Increase is the sum of potential emissions from both diesel engines. These limited emissions from the applicability test do not exceed the Significant Emission Rate (SER), and therefore the Project is not a major modification under PSD/NSR. Refer to Exhibit 4-3 for PSD review determination. Refer to Table 3.

Exhibit 4-2. PSD Review Determination

Pollutant [a]	Net Emission Increase (tpy) [b]	PSD/SER [c] (tpy)	PSD Review Required?
NOx	3.68	40	No
CO	14.6	100	No
TOC	5.53	40	No
PM	1.57	25	No
PM10	1.57	15	No
PM2.5	1.57	10	No
SOx	4.45	40	No
Individual HAP	0.0145	N/A	No
Total HAPs	0.0288	N/A	No

a. Pollutants: Ozone Depleting Substances, Fluorides, Sulfuric acid mist, H_2S, Total reduced sulfur, Reduced sulfur compounds, municipal waste combustor organics, metals or acid gases, and municipal solid waste landfill emissions are not present or not applicable to the CCMA facility.
b. All emissions are in short tons per year (tpy).
c SERs defined in Title 40 of the Code of Federal Regulations (40 CFR) Section (§)52.21(b)(23)(i) and 401 KAR 51:001, §(218)(a).

5.0 REGULATORY APPLICABILITY ANALYSIS

Applicability of the Commonwealth of Kentucky Regulations under Title 401 – Energy and Environmental Cabinet, Department for Environmental Protection, Kentucky Administrative Regulations (401 KAR) and Federal Regulations under the U.S. Code of Federal Regulations, Title 40 – Protection of the Environment, Chapter 1- Environmental Protection Agency, Subchapter C Air Programs (40 CFR) are presented below.

5.1 AIR QUALITY STANDARD ATTAINMENT STATUS

The facility is located in Calvert City, Marshall County, Kentucky, which is in attainment of, or unclassifiable for, all ambient air quality standards. The proposed project would be governed by the regulations for attainment areas as defined in the Commonwealth of Kentucky rules. Attainment areas are areas defined by EPA as meeting the National Ambient Air Quality Standards (NAAQS) pursuant to 40 CFR 81.318. While the proposed Project is located at a major stationary source, it will not result in a significant emissions increase of a regulated NSR pollutant. The Project will not be a major modification as defined under 401 KAR 51.001 Sec. 1 (114) and therefore not subject to the requirements of Prevention of Significant Deterioration (PSD) per 401 KAR 51:017 or 40 CFR §52.21. Refer to emissions calculations in Section 4 of this narrative.

5.2 CURRENT APPLICABLE REGULATIONS

This Title V renewal application requests only minor revisions to the existing Title V permit. Therefore, the CCMA Facility will remain subject to all applicable regulations of their current Title V Air Quality Permit V-17-038.

5.3 NEW APPLICABLE REGULATIONS

5.3.1 New Applicable Commonwealth of KY Regulations

401 KAR 60:005, Sections 2(2)(dddd) which incorporates by reference 40 CFR 60.4200-60.4219 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, applies to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE).

401 KAR 63:002, Sections 2(4)(eeee), which incorporates by reference 40 CFR 63.6580-63.6675 (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, applies to stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions.

5.3.2 New Applicable Federal Regulations

PSD Review. The regulations for PSD in 40 CFR 52.21 require that any new major source or modification at an existing major source be reviewed to determine if the new construction or modification is subject to regulations under the Clean Air Act. The PSD review requirements apply to any new or modified source that belongs to one of 28 specific source categories having potential emissions of 100 tons per year or more of any regulated pollutant, or to all other sources having potential emissions of 250 tons per year or more of any regulated pollutant. They also apply to any modification at a major stationary source which results in a significant net emission increase of any regulated pollutant. This review was conducted, and it was determined that the proposed Project would not result in a major modification.

40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, applies to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE). CCMA is adding two diesel engines that are subject to this subpart. Many sections of Subpart IIII apply to these engines as detailed in Form V.

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants (NESHAP) for National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, applies to stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. An affected source must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. No further requirements apply for such engines under this part.

5.4 NON-APPLICABLE REGULATIONS

401 KAR 51:017, Prevention of significant deterioration of air quality. This regulation is not applicable based on the applicability analysis conducted to determine that the proposed Project is not a major modification.

6.0 SUMMARY

CCMA is requesting a renewal of Permit No. V-17-038 and the incorporation of two diesel engines, the off-permit change made in February 2022, and the significant permit revision initially applied for in July 2022. An applicability analysis was conducted to determine that resultant net emissions increase for the Project do not exceed the Significant Emission Rate as defined in PSD regulations. Therefore, the Project is not a major modification and is not subject to the requirements of PSD.

Figure 1

Site Location Map

6/15/2022

S:\Drawings\2-3100's\2-3146-36-07 Induction Furnaces

LAN Associates, Inc.
ENVIRONMENTAL CONSULTING
ENGINEERING
PLANNING & ZONING

Figure 1 - Site Location Map

CC Metals and Alloys, LLC

1542 North Main Street, Calvert City, KY 42038

Created: EL	Reviewed: KK	Figure: 1

0 875 1,750 3,500 5,250 7,000 Feet

Scale 1:30,000	Date: 6/15/2022
	Job No. 2.3146.36

ESRI

Figure 2

Site Plan – Emissions Points

10/13/2022

TENNESSEE RIVER

RAW MATERIAL STORAGE

RAW MATERIAL STORAGE

COOLING TOWER

#15/16 A.P.C.

IND. FCE. APC

INDUCTION FURNACES

#6 A.P.C.

SCRUBBER

FINISHED PRODUCT SSTORAGE

ADMIN. BLDG.

95

GRAPHIC SCALE

0 150 300

(IN FEET)

1 inch = 300 ft.

SITE PLAN - EMISSION POINTS DESIGNATION

EP TAG	EU TAG	EMISSION POINT SCHEDULE DESCRIPTION
002	002	FERROALLOYS & METALS SUBMERGED ELECTRIC ARC FURNACE #6
010	010	FERROALLOYS & METALS SUBMERGED ELECTRIC ARC FURNACE #15
011	011	FERROALLOYS & METALS SUBMERGED ELECTRIC ARC FURNACE #16
019	019	CRUSHING AND SIZING PLANT #1/3
020	020	CRUSHING AND SIZING PLANT #4&8
021	021	CRUSHING AND SIZING PLANT #6
	023	CASTING BEDS – FURNACES #6
	023B	CASTING BEDS – FURNACES #15 & #16
025	025	NODULLOY CRUSHING AND SIZING PLANT
029	029	LOADING OF BAGHOUSE DUST FOR SALE
030	030	VEHICLE MILES TRAVELED – NOT SHOWN
	031	EMERGENCY DIESEL GENERATOR
	035	TRACK SCREENING PLANT
	036	268 HP EMERGENCY DIESEL GENERATOR
	037	DIESEL AIR COMPRESSOR

DATE : 10/13/22

CHECKED : KK

DRAWN : MKL

SCALE : 1" = 300'

REVISION :

CC METALS AND ALLOYS, LLC
1542 NORTH MAIN STREET
CALVERT CITY, KY 42029

LAN ASSOCIATES, INC.
ENVIRONMENTAL CONSULTING
ENGINEERING
PLANNING & ZONING
200 MALAGA STREET, SUITE 3, ST. AUGUSTINE, FLORIDA 32084

JOB NO. 3146.91

DWG. FILE CODE CCMA06-22

FIGURE NO. 2

Table 1

268 hp Emergency Backup Generator

Potential to Emit

Table 1
CCMA
268 hp Backup Generator PTE
2022 Title V Renewal

Process	Maximum Usage[2]	Rating		Fuel Consumption	Fuel
	hr/yr	*kW*	*hp*	*gal/hr*	*gal diesel*
Diesel Generator[1]	500	200	268	15	7400

Pollutant	Process	Product	Pollutant	Emission Factor	Hourly Potential to Emit	Annual Potential to Emit
				lb/1000 gal diesel	*lb/hr*	*TPY*
Criteria Pollutants[3]	Diesel Generator	Power	NOx	604	8.94	2.235
	Diesel Generator	Power	CO	130	1.92	0.481
	Diesel Generator	Power	TOC	49.3	0.73	0.182
	Diesel Generator	Power	PM	14	0.21	0.0518
	Diesel Generator	Power	PM10	14	0.21	0.0518
	Diesel Generator	Power	PM2.5	14	0.21	0.0518
	Diesel Generator	Power	SOx	39.7	0.59	0.147
Speciated Organics[4]	Diesel Generator	Power	Benzene	1.29E-01	1.91E-03	4.77E-04
	Diesel Generator	Power	Toluene	3.86E-02	5.71E-04	1.43E-04
	Diesel Generator	Power	Ethylbenzene	3.07E-03	4.54E-05	1.14E-05
	Diesel Generator	Power	Xylenes	6.84E-03	1.01E-04	2.53E-05
	Diesel Generator	Power	Formaldehyde	6.63E-02	9.81E-04	2.45E-04
PAHs[4]	Diesel Generator	Power	Naphthalene	1.29E-02	1.91E-04	4.77E-05
	Diesel Generator	Power	Chrysene	1.20E-05	1.78E-07	4.44E-08
	Diesel Generator	Power	Fluoranthene	1.31E-04	1.94E-06	4.85E-07
	Diesel Generator	Power	Benz(a)anthracene	1.52E-06	2.25E-08	5.62E-09
	Diesel Generator	Power	Benzo(a)pyrene*	4.29E-07	6.35E-09	1.59E-09
	Diesel Generator	Power	Polycyclic Organic Matter (POM)	**1.30E-02**	1.92E-04	4.81E-05
Total HAPs[4]	Diesel Generator	Power	Total HAPs	**2.57E-01**	3.80E-03	9.51E-04

Notes:

1 Generator information from Rental Power 200 kW Cummins Specification Sheet.

2 Although the emergency generator is limited to 100 non-emergency hours by 40 CFR 60.4211(f)(2)(i), the PTE is based on 500 operating hours.

3 Emission Factors used from AP 42 Chapter 3.3 Gasoline And Diesel Industrial Engines (Table 3.3-1).

4 Emission Factors used from AP 42 Chapter 3.3 Gasoline And Diesel Industrial Engines (Table 3.3-2).

Diesel Generator designed to meet EPA Tier 3 Standards; emission factors used are conservative Tier 2 Emission Standards

All emission factors were converted to lb/SCC unit using the EPA WebFIRE emission factor search.

Maximum Sulfur content limit in fuel was 500 ppm per 40 CFR 80.510 (a) cited from 40 CFR Part 60 Subpart IIII; however, this rule was removed on 01/01/2022.

The facility uses ultra low sulfur diesel, which cnotains less than 15 ppm of sulfur.

Hourly Potential to Emit (lbs/hr) = Emission Factor (lb/1000 gal) * Fuel Consumption (gal/hr) / 1000

Annual Potential to Emit (tpy) = Hourly Potential to Emit (lbs/hr) * Maximum Usage (hrs/yr) / 2000 (lbs/ton)

Table 2

Diesel Air Compressor

Potential to Emit

Table 2
CCMA
Diesel Air Compressor PTE
2022 Title V Renewal

Process	Maximum Usage[2]	Rating		Fuel Consumption	Fuel
	hr/yr	*kW*	*hp*	*gal/hr*	*gal diesel*
Air Compressor[1]	8760	433	580	25	216810

Pollutant	Process	Product	Pollutant	Emission Factor	Hourly Average Potential to Emit	Annual Average Potential to Emit
				lb/1000 gal diesel	*lb/hr*	*TPY*
Criteria Pollutants[3]	Air Compressor	Air	NOx[5]	13.3	0.330	1.443
	Air Compressor	Air	CO	130.0	3.22	14.0927
	Air Compressor	Air	TOC	49.3	1.22	5.3444
	Air Compressor	Air	PM	14.0	0.35	1.5177
	Air Compressor	Air	PM10	14.0	0.35	1.5177
	Air Compressor	Air	PM2.5	14.0	0.35	1.5177
	Air Compressor	Air	SOx	39.7	0.98	4.3037
Speciated Organics[4]	Air Compressor	Air	Benzene	0.13	0.00319	0.01398
	Air Compressor	Air	Toluene	3.86E-02	9.55E-04	0.0042
	Air Compressor	Air	Ethylbenzene	3.07E-03	7.60E-05	0.0003
	Air Compressor	Air	Xylenes	6.84E-03	1.69E-04	0.0007
	Air Compressor	Air	Formaldehyde	6.63E-02	1.64E-03	0.0072
PAHs[4]	Air Compressor	Air	Naphthalene	1.29E-02	3.19E-04	0.0014
	Air Compressor	Air	Chrysene	1.20E-05	2.97E-07	1.30E-06
	Air Compressor	Air	Fluoranthene	1.31E-04	3.24E-06	1.42E-05
	Air Compressor	Air	Benz(a)anthracene	1.52E-06	3.76E-08	1.65E-07
	Air Compressor	Air	Benzo(a)pyrene*	4.29E-07	1.06E-08	4.65E-08
	Air Compressor	Air	Polycyclic Organic Matter (POM)	**1.30E-02**	3.22E-04	0.0014
Total HAPs[4]	Air Compressor	Air	Total HAPs	**0.26**	0.00636	0.0279

Notes:

1 Air Compressor information from:
https://www.papemh.com/new-equipment/portable-power-equipment/air-compressors/large-low-pressure/hp1600wcu-t4f-air-compressor

2 There is no limit on the operating hours of the compressor.

3 Emission Factors used from AP 42 Chapter 3.3 Gasoline And Diesel Industrial Engines (Table 3.3-1).

4 Emission Factors used from AP 42 Chapter 3.3 Gasoline And Diesel Industrial Engines (Table 3.3-2).

5 The NOx emission factor used was from the EPA Engine Certification for the 2019 Cummins QSX15. The emission factor was converted to lb/1,000 gal diesel as shown below.
(g/kW-hr)*(1 lb/453.59 g)*(1 kW-hr/3412.14 Btu)*(137,381 Btu/ 1 gal diesel)*1000
= 13.315 lb/1000 gal diesel

Diesel Generator designed to meet EPA Tier 4 Standards; emission factors used are conservative Tier 2 Emission Standards
All emission factors (except NOx) were converted to lb/SCC unit using the EPA WebFIRE emission factor search.
Maximum Sulfur content limit in fuel was 500 ppm per 40 CFR 80.510 (a) cited from 40 CFR Part 60 Subpart IIII; however, this rule was removed on 01/01/2022.
The facility uses ultra low sulfur diesel, which cnotains less than 15 ppm of sulfur.
Hourly Potential to Emit (lbs/hr) = Emission Factor (lb/1000 gal) * Fuel Consumption (gal/hr) / 1000
Annual Potential to Emit (tpy) = Hourly Potential to Emit (lbs/hr) * Maximum Usage (hrs/yr) / 2000 (lbs/ton)

Table 3

Net Emissions Increase

Table 3
CCMA
Increase in PTE from Project
2022 Title V Renewal

Pollutant	Process	Pollutant	Hourly PTE Increase	Annual PTE Increase
			lb/hr	*TPY*
Criteria Pollutants	Total Project	NOx	9.27	3.68
	Total Project	CO	5.14	14.57
	Total Project	TOC	1.95	5.53
	Total Project	PM	0.55	1.569
	Total Project	PM10	0.55	1.569
	Total Project	PM2.5	0.55	1.569
	Total Project	SOx	1.57	4.45
Speciated Organics	Total Project	Benzene	5.10E-03	1.45E-02
	Total Project	Toluene	1.53E-03	4.33E-03
	Total Project	Ethylbenzene	1.21E-04	3.44E-04
	Total Project	Xylenes	2.71E-04	7.67E-04
	Total Project	Formaldehyde	2.62E-03	7.43E-03
PAHs	Total Project	Naphthalene	5.10E-04	1.45E-03
	Total Project	Chrysene	4.75E-07	1.35E-06
	Total Project	Fluoranthene	5.18E-06	1.47E-05
	Total Project	Benz(a)anthracene	6.01E-08	1.70E-07
	Total Project	Benzo(a)pyrene*	1.70E-08	4.81E-08
	Total Project	Polycyclic Organic Matter (POM)	5.14E-04	1.46E-03
Total HAPs	Total Project	Total HAPs	0.01016	0.02881

Notes: Increase in Potential to Emit = Backup Generator PTE + Air Compressor PTE

Appendix A

DEP 7007 AI

Administrative Information

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **CC Metals and Alloys, LLC**

KY EIS (AFS) #: **21- 157-00002**

Permit #: **V-17-038**

Agency Interest (AI) ID: **2930**

Date: **10/28/2022**

Section AI.1: Source Information

Physical Location Address:	**Street:**	1542 N. Main Street				
	City:	Calvert City	**County:**	Marshall	**Zip Code:**	42029
Mailing Address:	**Street or P.O. Box:**	P.O. Box 217				
	City:	Calvert City	**State:**	KY	**Zip Code:**	42029

Standard Coordinates for Source Physical Location

Longitude: 37.056944 (decimal degrees) **Latitude:** -88.348056 (decimal degrees)

Primary (NAICS) Category: 3313 Electrometallurgical Products / 331302 Ferroalloys

Primary NAICS #: 33130200 (Ferroalloys)/ 33130205 (Ferrosilicon, not made in blast furnaces)

Classification (SIC) Category: 3313 (Electrometallurgical Products, Except Steel) **Primary SIC #:** 3313

Briefly discuss the type of business conducted at this site: Ferroalloys production and processing

Description of Area Surrounding Source: ☐ Rural Area ☑ Industrial Park ☐ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 137

Approximate distance to nearest residence or commercial property: .25 miles to neighboring industrial site

Property Area: 152.92 acres

Is this source portable? ☐ Yes No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☑ Currently Hold	☐ Need	☐ N/A

Type of Regulated Waste Activity:

☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____

☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☐ N/A

Section AI.2: Applicant Information

Applicant Name: CC Metals and Alloys, LLC

Title: (if individual)

Mailing Address:
Street or P.O. Box: 1542 N. Main Street, P.O. Box 217
City: Calvert City **State:** KY **Zip Code:** 42029

Email: (if individual)

Phone: 270-395-7631

Technical Contact

Name: Guy D. VanDoren, P.E., LAN Associates, Inc.

Title:

Mailing Address:
Street or P.O. Box: 200 Malaga Street, Suite 3
City: St. Augustine **State:** FL **Zip Code:** 32084

Email: gvandoren@lan-fl.com

Phone: 904-610-6109 (m)

Air Permit Contact for Source

Name: Chris Cobb

Title: Plant Manager

Mailing Address:
Street or P.O. Box: 1542 N. Main Street, P.O. Box
City: Calvert City **State:** KY **Zip Code:** 42029

Email: ccobb@ccmetals.com

Phone: 270-703-0213 (m)

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position

Section AI.4: Type of Application

Current Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	Significant Revision	☐ Administrative Permit Amendment
☑ Renewal Permit	☐ Revised Registration	Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ PSD ☐ ISR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☐ Yes ☑ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☑ **Yes** ☐ **No** **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- ☐ DEP7007A Indirect Heat Exchangers and Turbines
- ☐ DEP7007B Manufacturing or Processing Operations
- ☐ DEP7007C Incinerators and Waste Burners
- ☐ DEP7007F Episode Standby Plan
- ☐ DEP7007J Volatile Liquid Storage
- ☐ DEP7007K Surface Coating or Printing Operations
- ☐ DEP7007L Mineral Processes
- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
- ☐ DEP7007BB Certified Progress Report
- ☐ DEP7007CC Compliance Certification
- ☐ DEP7007DD Insignificant Activities
- ☑ DEP7007EE Internal Combustion Engines
- ☐ DEP7007FF Secondary Aluminum Processing
- ☐ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☐ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☑ Site Map
- ☐ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☐ Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Chris Cobb
Authorized Signature

10/28/22
Date

Chris Cobb
Type or Printed Name of Signatory

Plant Manager
Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

Appendix B

DEP 7007 EE

Internal Combustion Engines

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007EE

Internal Combustion Engines

___ Section EE.1: General Information
___ Section EE.2: Operating Information
___ Section EE.3: Design Information
___ Section EE.4: Fuel Information
___ Section EE.5: Emission Factor Information
___ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach EPA certification of the engine

Source Name: **CC Metals and Alloys, LLC**
KY EIS (AFS) #: **21- 157-00002**
Permit #: **V-17-038**
Agency Interest (AI) ID: **2930**
Date: **10/28/2022**

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
036	268 hp Emergency Diesel Generator	N/A	N/A	Cummins	C200D6RG	2013	4/2/2013	10/2022	N/A	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ; 401 KAR 60:005, Section 2(4)(dddd); 401 KAR 63:002, Section 2(2)(eeee)

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
037	Diesel Air Compressor	N/A	N/A	Doosan	HP1600WCU-T4F	2019	8/9/2019	03/2021	N/A	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ; 401 KAR 60:005, Section 2(4)(dddd); 401 KAR 63:002, Section 2(2)(eeee)

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency,Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? *(Yes/No)*	Rental Time Period *(hrs)*	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
036	Emergency	500	No	N/A	
037	Non-emergency	8760	Yes	Indefinite	

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power *(bhp)*	Maximum Engine Speed *(rpm)*	Total Displacement *(L)*	Number of Cylinders
036	Stationary, Non-Road	Compression	4-stroke	268	1800	6.69	6
037	Stationary, Non-Road	Compression	4-stroke	580	1800	14.9	6

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used *(%)*	Maximum Fuel Consumption	Heat Content	Sulfur Content *(%)*	SCC Code	SCC Units
036	Primary	Diesel (ULSD)	No. 2-D S15	100	14.8 gal/hr	19,300 Btu/lb	0.0015	20100102	1000 gallons
037	Primary	Diesel (ULSD)	No. 2-D S16	100	24.75 gal/hr	19,300 Btu/lb	0.0015	20100102	1000 gallons

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
036	Diesel	NOx	604	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	CO	130	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	TOC	49.3	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	PM	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	PM10	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	PM2.5	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	SOx	39.7	lb/1000 gal	AP-42 Table 3.3-1/EPA
036	Diesel	Individual HAP (Benzene)	0.13	lb/1000 gal	AP-42 Table 3.3-2/EPA
036	Diesel	Total HAPs	0.26	lb/1000 gal	AP-42 Table 3.3-2/EPA
037	Diesel	NOx	13.3	lb/1000 gal	EPA Engine Certification
037	Diesel	CO	130	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	TOC	49.3	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	PM	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	PM10	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	PM2.5	14	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	SOx	39.7	lb/1000 gal	AP-42 Table 3.3-1/EPA
037	Diesel	Individual HAP (Benzene)	0.13	lb/1000 gal	AP-42 Table 3.3-2/EPA
037	Diesel	Total HAPs	0.26	lb/1000 gal	AP-42 Table 3.3-2/EPA

Section EE.6: Notes, Comments, and Explanations

Appendix C

DEP 7007 N

Source Emissions Profile

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation
___ Complete DEP7007AI

Source Name: **CC Metals and Alloys, LLC**
KY EIS (AFS) #: **21- 157-00002**
Permit #: **V-17-038**
Agency Interest (AI) ID: **2930**
Date: **10/28/2022**

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
036	268 hp Emergency Diesel Generator	1	Diesel Generator	None	N/A	N/A	0.0144[1]	NOx	604	AP-42[2]	0.00%	0.00%	8.94	8.94	2.23	2.23
								CO	130	AP-42[2]			1.924	1.924	0.481	0.481
								TOC	49.3	AP-42[2]			0.730	0.730	0.182	0.182
								PM	14	AP-42[2]			0.207	0.207	0.0518	0.0518
								PM10	14	AP-42[2]			0.207	0.207	0.0518	0.0518
								PM2.5	14	AP-42[2]			0.207	0.207	0.0518	0.0518
								SOx	39.7	AP-42[2]			0.588	0.588	0.147	0.147
								Individual HAP (Benzene)	0.13	AP-42[2]			0.00191	0.00191	4.77E-04	4.77E-04
								Total HAPs	0.26	AP-42[2]			0.00380	0.00380	9.51E-04	9.51E-04

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
037	Diesel Air Compressor	1	Diesel Air Compressor	None	N/A	N/A	0.0286[1]	NOx	13.3	EPA Engine Certification[3]	0.00%	0.00%	0.330	0.330	1.44	1.44
								CO	130	AP-42[2]			3.22	3.22	14.1	14.1
								TOC	49.3	AP-42[2]			1.22	1.22	5.34	5.34
								PM	14	AP-42[2]			0.347	0.347	1.52	1.52
								PM10	14	AP-42[2]			0.347	0.347	1.52	1.52
								PM2.5	14	AP-42[2]			0.347	0.347	1.52	1.52
								SOx	39.7	AP-42[2]			0.983	0.983	4.30	4.30
								Individual HAP (Benzene)	0.13	AP-42[2]			0.00319	0.00319	0.0140	0.0140
								Total HAPs	0.26	AP-42[2]			0.00636	0.00636	0.0279	0.0279

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(° F)*	Exit Velocity *(ft/sec)*
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
036	268 hp Emergency Diesel Generator	1	12.2	4.75	4102012	3801129	788	5.6
037	Diesel Air Compressor	1	7.5	18.9	4102113	380057	788	8.6

Section N.4: Notes, Comments, and Explanations
1. SCC units in 1000 gallons of diesel for Maximum Design Capacity and Uncontrolled Emission Factor.
2. Emission Factors based on AP-42 Chapter 3.3, Tables 3.3-1 and 3.3-2. Exact emission factors from EPA WebFIRE for correct SCC units. Only exception is the NOx emission factor for the diesel air compressor which came from the EPA engine certification data.
3. The emission factor for NOx emissions from the diesel air compressor was taken from the EPA engine certification as included in the calculations Appendix.

Appendix D

DEP 7007 V

Applicable Requirements and Compliance Activities

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

ditional Documentat
___ Complete DEP7

Source Name: **CC Metals and Alloys, LLC**

KY EIS (AFS) #: **157-00002**

Permit #: **V-17-038**

Agency Interest (AI) ID: **2930**

Date: **10/28/2022**

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
036	268 hp Emergency Diesel Generator	40 CFR 63.6590(c)	N/A	N/A	N/A	The permittee shall meet the requirements of 40 CFR 63, Subpart ZZZZ	Meeting the requirements of 40 CFR 60, Subpart IIII
036	268 hp Emergency Diesel Generator	40 CFR 60.4204	PM, NOx, NMHC, CO	N/A	N/A	The permittee must comply with the emission standards for new CI engines in 40 CFR 60.4202	N/A
036	268 hp Emergency Diesel Generator	40 CFR 60.4206	PM, NOx, NMHC, CO	N/A	N/A	The permittee shall operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 40 CFR 60.4205 over the entire life of the engine.	N/A

036	268 hp Emergency Diesel Generator	40 CFR 60.4207(b)	N/A	N/A	N/A	The permittee shall use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonraod diesel fuel.	N/A
036	268 hp Emergency Diesel Generator	40 CFR 60.4211(f)	N/A	N/A	N/A	The permittee shall operate the emergency stationary ICE according to the requirements in 40 CFR 60.4211(f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart III, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3) is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 60.4211(f)(1) though (2), the engine will not be considered an emergency engine under 40 CFR 60, Subpart IIII and shall meet all requirements for non-emergency engines.	N/A
037	Diesel Air Compressor	40 CFR 63.6590(c)	N/A	N/A	N/A	The permittee shall meet the requirements of 40 CFR 63, Subpart ZZZZ	Meeting the requirements of 40 CFR 60, Subpart IIII
037	Diesel Air Compressor	40 CFR 60.4205	PM, NOx, NMHC, CO	N/A	N/A	The permittee must comply with the emission standards for new CI engines in 40 CFR 60.4201	N/A
037	Diesel Air Compressor	40 CFR 60.4206	PM, NOx, NMHC, CO	N/A	N/A	The permittee shall operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 40 CFR 60.4205 over the entire life of the engine.	N/A
037	Diesel Air Compressor	40 CFR 60.4207(b)	N/A	N/A	N/A	The permittee shall use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonraod diesel fuel.	N/A

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
036	268 hp Emergency Diesel Generator	N/A	40 CFR 60.4209(a)	Hours	If the emergency stationary CI internal combustion engine does not meet the standards applicable to non-emergency engines, the permittee shall install a non-resettable hour meter prior to startup of the engine.
036	268 hp Emergency Diesel Generator	Particulate Matter	40 CFR 60.4209(b)	Backpressure	If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter shall be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.
036	268 hp Emergency Diesel Generator	N/A	401 KAR 52:020, Section 10	Diesel usage (gal) and hours of operation	The permittee shall monitor the amount of diesel usage (gal) and the hours of operation for the generator on a monthly basis.
037	Diesel Air Compressor	Particulate Matter	40 CFR 60.4209(b)	Backpressure	If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter shall be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.
036	Diesel Air Compressor	N/A	401 KAR 52:020, Section 10	Diesel usage (gal) and hours of operation	The permittee shall monitor the amount of diesel usage (gal) and the hours of operation for the generator on a monthly basis.

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
036	268 hp Emergency Diesel Generator	N/A	401 KAR 52:020, Section 10	Diesel usage and hours of operation	The permittee shall maintain records of the amount of diesel usage (gal) and hours of operation for the generator on a monthly basis.
036	268 hp Emergency Diesel Generator	Particulate Matter	40 CFR 60.4214(c)	Any corrective action taken after the backpressure monitor has notified the permittee that the high backpressure limit of the engine is approached.	If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the permittee shall keep records of any corrective action taken after the backpressure monitor has notified the permittee that the high backpressure limit of the engine is approached.
036	268 hp Emergency Diesel Generator	N/A	41 CFR 60.4214(b)	The operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter, the time of operation of the engine, and the reason the engine and the reason the engine was in operation during that time.	The permittee is not required to submit an initial notification. If the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resetable hour meter. The permittee shall record the time of operation of the engine and the reason the engine and the reason the engine was in operation during that time.
037	Diesel Air Compressor	N/A	401 KAR 52:020, Section 10	Diesel usage and hours of operation	The permittee shall maintain records of the amount of diesel usage (gal) and hours of operation for the generator on a monthly basis.
037	Diesel Air Compressor	Particulate Matter	40 CFR 60.4214(c)	Any corrective action taken after the backpressure monitor has notified the permittee that the high backpressure limit of the engine is approached.	If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the permittee shall keep records of any corrective action taken after the backpressure monitor has notified the permittee that the high backpressure limit of the engine is approached.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
036	268 hp Emergency Diesel Generator	N/A	40 CFR 60.4214(d)	Company name and address where the engine is located. Date of the report and beginning and ending dates of the reporting period. Engine site rating and model year. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. Hours spent for operation for the purposes specified in 40 CFR 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.	If the emergency CI ICE operates for the purpose specified in 40 CFR 60.4211(f)(3)(i), the permittee shall submit an annual report according to the requirements in 40 CFR 60.4214(d)(1) through (3). Annual reports for each calendar year shall be submitted no later than March 31 of the following calendar year.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
036	268 hp Emergency Diesel Generator	N/A	401 KAR 59:005, Section 2(2)	N/A	The cabinet may require the owner or operator of any affected facility specified in subsection (1)(a) to (d) of this section to conduct performance test(s) according to 401 KAR 50:045 and furnish a written report of the results of such performance test(s).
036	269 hp Emergency Diesel Generator	N/A	401 KAR 50:045, Section 1	N/A	The cabinet may require the owner or operator of an affected facility to sample emissions in accordance with methods approved by the cabinet or the U.S. EPA. All tests shall be made under the direction of persons qualified by training or experience in the field of air pollution control.
037	Diesel Air Compressor	N/A	401 KAR 59:005, Section 2(2)	N/A	The cabinet may require the owner or operator of any affected facility specified in subsection (1)(a) to (d) of this section to conduct performance test(s) according to 401 KAR 50:045 and furnish a written report of the results of such performance test(s).
037	Diesel Air Compressor	N/A	401 KAR 50:045, Section 1	N/A	The cabinet may require the owner or operator of an affected facility to sample emissions in accordance with methods approved by the cabinet or the U.S. EPA. All tests shall be made under the direction of persons qualified by training or experience in the field of air pollution control.

Section V.6: Notes, Comments, and Explanations
These units are subject to 40 CFR 63, Subpart ZZZZ. An affected source of this subpart must meet the rquirements of this part by meeting the requirements of 40 CFR 60, Subpart IIII for compression ignition engines.

Appendix E

Cummins Generator Specification Sheet

Rental Power
200 kW

> Specification sheet

Our energy working for you.™

Cummins Power Generation

Description

This Cummins Power Generation rental package is a fully integrated mobile power generation system, providing optimum performance, reliability and versatility for standby and prime power applications.

Features

Cummins diesel engines

- U.S. EPA Tier III compliant
- Rugged 4-cycle industrial diesel engine with excellent transient performance
- Lightweight, compact and excellent fuel economy
- 2-stage spin on fuel filter w/pre-filter water separator with drain
- Equipped with heavy duty, 2-stage air cleaners with dust ejector

Control Features

- The most advanced, reliable and capable generator set control system on the market today
- Controls provide precise frequency and voltage regulation, alarm and status message display in one easy to operate customer interface
- Remote monitoring and operation ready
- Auto shutdown at fault detection

Engine controls

- Oil Pressure and Water Temp Gauge
- Fuel Level Gauge & Battery Voltage Gauge
- Hour meter

Stamford alternators

- 12-lead reconnectable alternators fitted with voltage selection switch
- Permanent magnet excitation for improved performance in non-linear load applications

Rental package enclosure

- Heavy duty trailer package with pintle hitch and electric or hydraulic brakes
- Sound attenuated, white powder coated lockable enclosure
- 20 hour fuel tank (100% prime) with gauge
- Roof mounted, single point lift
- Cooling system rated for 131° F (55° C) at 100% prime ambient
- Complete engine fluid containment reservoir
- DOT approved trailer with light package, replaceable fenders and jack stand
- Voltage selector switch
- Shore power (120 VAC) - No breakers in shore power connection. Shore power loads are coolant heater (option) and battery charger (option). Connection: 15A/120V flanged male receptacle (5-20 flanged inlet).

		Standby rating		Prime rating			
Model	**Voltages (V)**	**60 Hz kW** (kVA)	**50 Hz kW** (kVA)	**60 Hz kW** (kVA)	**50 Hz kW** (kVA)	**Engine model**	**Alternator model**
C200D6RT	**208/480**	**200** (250)		**180** (225)		QSB7-G5	UCDI274J
	480/600 switchable	**200** (250)		**180** (225)		QSB7-G5	HCI434C

S-1616 (1/10)

Engine specifications

Engine model	QSB7-G5
Alternator data sheet	UCDI274J (208/480), HCI434C (480/600)
Engine data sheet	DS-92278
Tier rating	Tier III
Design	4 cycle, In-Line, turbocharged and after-cooled
Bore	107 mm (4.21 in.)
Stroke	124.0 mm (4.88 in.)
Displacement	6.69 liters (408 in^3)
Cylinder block	Cast iron, In-Line 6 cylinder
Battery capacity	2 x 750 cca
Battery charging alternator	100 amps
Starting voltage	12 volt, negative ground
Fuel system	Direct injection HPCR system
Fuel filter	Spin on fuel filter with water separator
Air cleaner type	2-stage, dry replaceable element with dust ejector
Lube oil filter type(s)	Single spin-on, full flow
Standard cooling system	118° F (48° C) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	Double layer concentric, 2/3 winding pitch
Rotor	Singe bearing, flexible disc
Insulation system	Class H per NEMA MG1-1.65 (208/480 VAC) Class H per NEMA MG1-1.65 (480/600 VAC switchable)
Standard temperature rise	115/50° C prime (208/480 VAC) 95/50° C prime (480/600 VAC switchable)
Exciter type	PMG (permanent magnet generator)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	< 1.5% no load, < 5% non-distorting balance linear load
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 2%

Power capability specifications (Assume power factor = 0.80 for 3 phase amps)

	Standby rating			
	240 V, 1 phase Amps	208 V, 3 phase Amps	480 V, 3 phase Amps	600 V, 3 phase Amps
C200D6RT	542	694*	226	241

* 240V, 3 phase = 601A

Electrical power panel specifications

Model voltage	120 V duplex receptacles	240 V twist	Load lug connection (stud diameter)	Load lug circuit breakers
120/480 Volt	2 - 20 Amp GFCI	3 - 50 Amp	1/2 inch	800 Amp
480/600 Volt switchable	0	0	1/2 inch	400 Amp

Site derating factors

Standby application: The engine may be operated at 1800 rpm up to 3,000 ft (915 m) and 122° F (50° C) without power deration. For sustained operation above these conditions, derate by 4% per 1,000 ft (300 m), and 8% per 18° F (10° C).

Our energy working for you.™

www.cumminspower.com

S-1616 (1/10)

Cummins® Power Generation

Control system

PowerCommand control

- Integrated automatic voltage regulator and engine speed governor
- Control components designed to withstand the vibration levels typical in generator sets

Standard control description

- Cycle cranking control
- Digital display panel
- Idle mode control
- Menu switch
- Panel backlighting
- Reset switch
- Run-off-auto switch
- Self diagnostics

Standard performance data warnings

- High coolant temperature
- High DC voltage
- Low coolant temperature
- Low DC voltage
- Low oil pressure
- Over current
- Weak battery
- Over speed
- Under frequency
- Intake manifold temperature OOR high/low
- Intake manifold temperature high
- Water in fuel OORH/OORL
- General engine fault
- Coolant level OOR high/low

Standard protection functions

- Warnings
- High coolant temperature
- High DC voltage
- Low coolant temperature
- Low DC voltage
- Low oil pressure
- Over current
- Weak battery

Shutdowns

- Emergency stop local/remote
- Fail to crank
- High AC voltage
- High coolant temperature
- Low coolant level
- Low AC voltage
- Low oil pressure
- Over current
- Over speed
- Under frequency
- Intake manifold temperature high
- Fail to start/stop
- Over frequency
- Alternator reconnecting switch operated (breaker closed)

Agency approvals

- NFPA110 for Levels 1 or 2 systems
- ISO 8528-4: 1993 Compliance, Controls and Switchgear
- CE Marking
- EN 50081-1, 2 Residential/Light Industrial Emissions or Industrial Emissions
- EN 50082-1.2
- ISO 7637-2, Level 2: DC supply surge test
- Mil Std 202C, Method 101 and ASTM B117: Salt Fog Test
- Designed and manufactured in ISO 9001 certified facilities. UL 508 suitable for use on generator sets that are UL 2200 Listed

Standard generator electrical features

- Multiple voltage selector switch (480/277 VAC/3 phase or 240/139 VAC/3 phase or 240/120 VAC/1 phase)
- Adjustable to 208/120 VAC/3 phase
- Single phase convenience receptacles
- Distribution panel with L1, L2, L3 neutral and ground
- Main line shunt trip type circuit breaker
- Auto start-stop with remote contacts
- Over current sensing
- 3 available auxiliary connections

Rental package options

- Immersion style coolant heater
- Tank style coolant heater
- Battery disconnect switch
- Cam lock distribution panel
- 110 Volt, 5 Amp battery charger
- Base mount generator – no trailer
- 600 Volt/480 Volt switchable

Our energy working for you.™

www.cumminspower.com

S-1616 (1/10)

Cummins Power Generation

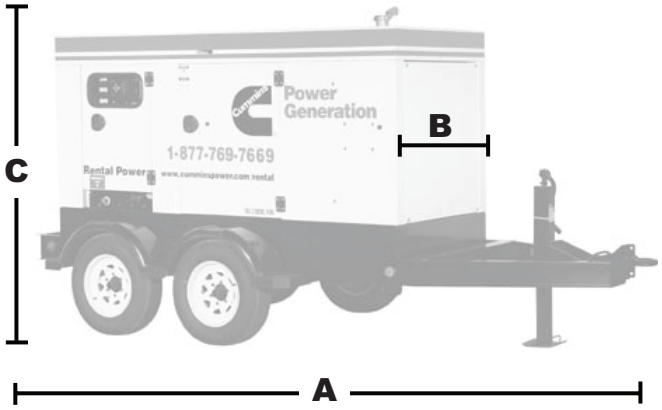
Ratings definitions

Standby:

Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating.(Equivalent to Fuel Stop Power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated.

Prime (unlimited running time):

Applicable for supplying power in lieu of commercially purchased power. Prime power is the maximum power available at a variable load for an unlimited number of hours. A 10% overload capability is available for limited time. (Equivalent to Prime Power in accordance with ISO8528 and Overload Power in accordance with ISO3046, AS2789, DIN6271, and BS5514).



Dimensions

Model	Dim "A" **mm** (in.)	Dim "B" **mm** (in.)	Dim "C" **mm** (in.)	Weight w/o fuel **kg** (lbs)	Weight with fuel **kg** (lbs)	Fuel capacity **liters** (gal)
C200D6RT	**3700** (146)	**1450** (57)	**1700** (67)	**2878** (6345)	**3641** (8028)	**965** (255)
With trailer	**5410** (213)	**2140** (84)	**2309** (91)	**3654** (8056)	**4418** (9739)	**965** (255)

Specifications

Model	KW rating		Sound level	Tier rating	Hours of operation (75% load)	
	Standby	**Prime**	**dB(A) @ 7 m**	**Standby**	**Standby**	**Prime**
C200D6RT	200	190	70.5	Tier III	20	23

Fuel consumption

		Standby				**Prime**			
60 Hz Ratings, kW (kVA)		**200 (250)**				**190 (237)**			
	Load	¼	½	¾	Full	¼	½	¾	Full
	Gal/hr	5	9.5	12.9	14.8	4.5	7.8	10.9	13.0
	L/hr	18.9	36	48.8	56	17	29.5	41.3	49.2

Trailer information

Model	Tire size	Tire type	Load range	Number of tires per trailer	Lug pattern	Wheel brand
C200D6RT	235/85-R16	Radial	2755 lbs - each	4	8 hole	Load Star

Cummins Power Generation
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA
Telephone: 763 574 5000
USA Toll-free: 877 769 7669
Fax: 763 574 5298

Our energy working for you.™

www.cumminspower.com

S-1616 (1/10)

Cummins Power Generation

Appendix F

Doosan Air Compressor Specification Sheet

Doosan HP1600WCU-T4F Air Compressor

Make	Doosan
Model	HP1600WCU-T4F Air Compressor
Type	Air Compressor

How can we help?

(850) 299-9640

Description

The **HP1600 WCU-T4F air compressor** from Doosan Portable Power is in a class of its own. An easy to maintain cooler, heavy-duty tandem axel running gear and cool-box design ensure high performance and long life. The rugged axel and running gear make the **HP1600** capable of withstanding the roughest jobsites, while the slipper spring system allows it to cope with highway towing. The cool-box design prolongs component life and eliminates long cool down periods.

Specifications

Air Discharge outlet Quantity: 1

Air Discharge outlet size - in (mm): 3 NPT (76.2)

Bhp @ rated speed (kW): 580 (433)

Displacement - cu in (L): 912 (14.9)

Electrical - Voltage/Battery Qty: 24/(2) 4D, 1000 CCA

Emissions Tier Level: Tier 4 Final (T4F)

Free-Air Delivery - cfm (m³/min): 1600 (45.3)

Fuel Tank Capacity - gal (L): 198 (749)

Height - in (mm): 103 (2616)

Height - in (mm): 98.3 (2497)

Hours of operation @ Full Load: 8,0

Idle speed - rpm: 1200

Length - in (mm): 293 (7442)

Length - in (mm): 227 (5766)

Make/model: Cummins/QSX15

Number of Cylinders: 6

Pressure range - psig (bar): 80 - 150 (5.5 - 10.3)

Rated operating Pressure - psig (bar): 150 (10.3)

Rated speed - rpm: 1800

Shipping Weight - w/o fuel - lb (kg): 16899 (7664)

Shipping Weight - w/o fuel - lb (kg): 17874 (8106)

Tire size - in: 215/75R17.5H

Track Width - in (mm): 71 (1803)

Width - in (mm): 90.1 (2290)

Working Weight - w fuel - lb (kg): 18600 (8435)

Working Weight - w fuel - lb (kg): 19565 (8873)

Features

- Doosan Portable Power air compressors are built to the highest standards, assuring long-term use and maximum productivity. The HP1600 is powered by a 6 cylinder, Tier 4 Final compliant Cummins QSX15 engine. With an onboard fuel capacity of 198 gallons, the HP1600 can run continuously for 8.5 hours at 100% load. All Doosan Portable Power products feature a galvanized sheet metal enclosure for the ultimate corrosion resistance. Doosan Portable Power is proud to be the industry leader for lowest cost of ownership and the largest worldwide support network.

Appendix G

EPA Engine Certification Information

Model Yea	Engine Family	Manufacturer	Certificate #	Issue Date	Commerce Introduction Date	Carryover Engine Family Name	Power Category
2013	DCEXL0409AAD	Cummins Inc.	DCEXL0409AAD-008	5/1/2012	6/1/2012		130<=kW<225
2019	KCEXL15.0AAL	Cummins Inc.	KCEXL15.0AAL-036	10/11/2018	8/2/2019	ECEXL15.0AAL	130<=kW<=560

Notes: Information from Nonroad Compression Ignition (NRCI) Engines at the site below.

Annual Certification Data for Vehicles, Engines, and Equipment | US EPA

The information for the 268 hp diesel emergency engine is in row 658 of the nonroad compression engine Excel file.

The information for the diesel air compressor engine is in row 5946 of the nonroad compression engine Excel file.

Applicatable Regulation	Applicable Tier	Applicable Compliance Standard	Fuel	Fuel Meter System
Part 60 only certified to the requirements of part 89	Tier 3	Not Applicable	300-500 ppm Low Sulfur Diesel	Direct Diesel Injection
Part 60 and 1039	Tier 4 (Final or Phase In)	Not Applicable	7-15 ppm Ultra Low Sulfur Diesel	Direct Diesel Injection

Useful Life of Engine Family	Engine Combustion Cycle	Non Aftertreatment Device Type
10 years / 8,000 hrs	4 Stroke Compression Ignition	
10 years / 8,000 hrs	4 Stroke Compression Ignition	Cooled EGR - Electronic/Electric; Electronic Control

Aftertreatment Device Type	Certification Level Steady-State Discrete Modal Test Results (g/kW-hr)								
	NMHC	NOx	NMHC+NOx	CO	PM	CO2	N2O	CH4	NMHC
	0.15	3.86	4	1	0.11	725			
Ammonia Slip Catalyst; Diesel Oxidation Catalyst; PTOX-DPF-Active; Selective Catalytic Reduction	0	0.07		0	0	672	0.11		0

Certification Level Transient Test Results (g/kW-hr)							Smoke Opacity (in pct)			FEL (g/kW-hr)							
NOx	NMHC+NOx	CO	PM	CO2	N2O	CH4	Acceleratic	LUG	Peak	NOx	NMHC+NO	PM	Engine Model	Engine Coc	Displacem	Certificatic	Engine Ope
													QSB7-G5	2605;FR92	6.69	300-500 pp	Constant Sp
	0.15		0	0	689	0.12							QSX15	43961;FR1	14.948	7-15 ppm l	Variable Sp

Test Proce	Test Type
Steady-Sta	Ramped-Modal Testing
Steady-Sta	Ramped-Modal Testing