Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Conditional Major, Construction/Operating
Permit: F-25-014
SRC of Lexington, Inc. – Mercer Road
1953 Mercer Road
Lexington, KY 40511
January 3, 2025
Qinyi Wang, Reviewer

SOURCE ID:	21-067-00302
AGENCY INTEREST:	1091
ACTIVITY:	APE20240001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3531, Construction Machinery and Equipment

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Fayette
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead
If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☒ Yes ☐ No
If yes, list which pollutant(s): Ethyl Benzene, Naphthalene, Toluene, and Xylenes

PTE* greater than 25 tpy for combined HAP ☒ Yes ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
SRC manufactures large components that go in mining and construction vehicles, such as engines. The components are disassembled, cleaned, altered, and reassembled. They are then tested and painted.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-25-014 Activity: APE20240001

Application Received: 12/17/2024 Application Complete Date(s): 3/4/2025

Permit Action: ☒ Initial ☐ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☒Yes ☐No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐Yes ☒No

Description of Action:

ARE20240001 Initial Registered Source

On July 16, 2024, an application was received from SRC of Lexington, Inc. – Mercer Road (SRC) for an initial registration for their new manufacturing facility located at 1953 Mercer Road, Lexington, (Fayette County) KY. This registration application has been combined and rolled into the initial conditional major permit action APE20240001.

- Two Boilers (EU01 and EU02) are existing on site from prior owner.
- One Dyno Engine Test Activities (EU03) to be added. This unit is being relocated from the SRC location at 1105 Eastland Dr.

APE20240001 Initial Conditional Major/Syn Minor

On December 17, 2024, an application was received from SRC of Lexington, Inc. – Mercer Road (SRC) for an initial conditional major permit/synthetic minor for their new manufacturing facility located at 1953 Mercer Road, Lexington, (Fayette County) KY.

- Three Dyno Engine Test Activities (EU04 and EU05) to be added.
- Two Paint Booths (EU06 and EU07) to be added.

F-25-014 Emission Summary		
Pollutant	2024 Actual (tpy)	PTE F-25-014 (tpy)
CO	N/A	63.98
NOx	N/A	77.98
PT	N/A	13.04
PM_{10}	N/A	10.46
$PM_{2.5}$	N/A	9.5
SO_2	N/A	1.43
VOC	N/A	508.97*
Lead	N/A	1.43E-05
Greenhouse Gases (GHGs)		
Carbon Dioxide	N/A	14099.96
Methane	N/A	0.49
Nitrous Oxide	N/A	0.09
CO_2 Equivalent (CO_2e)	N/A	14139.79
Hazardous Air Pollutants (HAPs)		

Total HAPs	N/A	386.30*
Benzene	N/A	0.05
Cumene	N/A	3.06
Ethyl Benzene	N/A	90.67*
Hexane; N-Hexane	N/A	0.05
Naphthalene	N/A	9.17*
Toluene	N/A	9.19*
Xylenes (Total)	N/A	274.07*

Note:
*: The source has federally enforceable source-wide limits of 90 tpy VOC, 9 tpy single HAP, except for Naphthalene (Emission Limit is 1.414 tpy), and 22.5 tpy combined HAPs.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit 01 (01) Boiler #1 Emission Unit 02 (02) Boiler #2				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	0.56 lb/MMBtu	401 KAR 59:015, Section 4(1)(a)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO_2	3.0 lb/MMBtu	401 KAR 59:015, Section 5(1)(a)(1.)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
VOC	Source wide 90 tpy	To preclude 401 KAR 52:020 & 401 KAR 51:017	AP-42 Chapter 1.4.	Record keeping and 12 month rolling total

Initial Construction Date: EU01: 8/2011; EU02: 8/2011

Process Description:

Low NOx and CO burner, ultra-high efficiency both Boilers
Manufacturer: Buderus, Bosch Group
Model: SB80
Heat Input Capacity: 2.2288 MMBtu/hr each
Fuel: Natural Gas
Identify General Type: Indirect Heat Exchanger (Fire tubes)

Applicable Regulation:

401 KAR 59:015, *New Indirect Heat Exchangers*, applicable to indirect heat exchangers having a heat input capacity greater than one (1) million Btu per hour (MMBtu/hr) commenced on or after April 9, 1972 (401 KAR 59:015, Section 2(1)).

State-Origin Requirements:

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.* is applicable to each affected facility or source which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not subject to another emission standard with respect to hazardous matter emissions commenced after April 9, 1972.

Comments:
Boilers are existing from prior owner.

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, is not applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 due to a maximum design heat input capacity less than 10 MMBtu/h.

PM Emission Limit, 401 KAR 59:015 Section 4.(1)(a); 0.56 lb/MMBtu for sources with a total heat input capacity totaling 10 MMBtu/hr or less for all affected facilities at the source.

Emission Unit 01 (01) Boiler #1 Emission Unit 02 (02) Boiler #2
Sulfur Dioxide Emission Limit, 401 KAR 59:015 Section 5.(1)(a)1.; 3.0 lb/MMBtu for sources with a total heat input capacity totaling 10 MMBtu/hr or less for all affected facilities at the source combusting liquid and gaseous fuels.

Emission Unit 03 (03) Dyno Small Engine Testing
Emission Unit 04 (04) Dyno Medium Engine Testing
Emission Unit 05 (05) Dyno Large Engine Testing

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	Source wide 90 tpy	To preclude 401 KAR 52:020 & 401 KAR 51:017	AP-42 Chapter 3	Record Keeping and 12 month rolling total
Individual HAP	Source wide 9.0 tpy	To preclude 401 KAR 52:020	AP-42 Chapter 3	Record keeping and 12 month rolling total
Combined HAP	Source wide 22.5 tpy	To preclude 401 KAR 52:020	AP-42 Chapter 3	Record keeping and 12 month rolling total

Initial Construction Date: EU03: 7/2024, EU04: proposed 5/2025, EU05: proposed 5/2025

Process Description:

(3) Three emission units are Dyno Engine units used to test rebuilt engines.

Emission Unit 03 Dyno Small Engines less than 600 HP
Emission Unit 04 Dyno Medium Engines greater than 600 HP and less than 1500 HP
Emission Unit 05 Dyno Large Engines greater than 1500 HP

Maximum Rated Capacity:
For EU03: 30.4 gal/hr
For EU04: 76.1 gal/hr
For EU05: 202.9 gal/hr
Manufacturer: Varies with each engine
Construction Commenced: Varies with each engine
Control Device: None

State-Origin Requirements:

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.* is applicable to each affected facility or source which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not subject to another emission standard with respect to hazardous matter emissions commenced after April 9, 1972.

Emission Unit 03 (03) Dyno Small Engine Testing
Emission Unit 04 (04) Dyno Medium Engine Testing
Emission Unit 05 (05) Dyno Large Engine Testing

Precluded Regulations:

401 KAR 63:002, Section 2(4)(tttt), 40 C.F.R. 63.9280 through 63.9375, Tables 1 through 7 (Subpart PPPPP), *National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands*, is applicable to test cells/stands located at major sources of HAP emissions. Since the source has accepted emission limits pertaining to single and combined HAP(s), which classifies the facility to be a Conditional Major source, this subpart is to be precluded.

Comments:

EU03 Engines less than 600 horsepower (HP):

Emission factors based on AP-42 Table 3.3-1. NOx emission factor is Nonroad EPA tier 1. Engines tested on the small dynos are tested for 1.5 hours per 6 hours cycles. It takes about 4.5 hours to change out the engines for testing. Thus, the small engines can be tested for 2190 hours per year (2190=1.5/6*8760) with the most common capacity of 30.4 gal/hr.

EU04 Engines greater than 600 horsepower (HP) and less than 1500 horsepower (HP):

Emission factors based on AP-42 Table 3.4-1. NOx emission factor is Nonroad EPA tier 1. Engines tested on the medium dynos are tested for 1.5 hours per 6 hours cycles. It takes about 4.5 hours to change out the engines for testing. Thus, the medium engines can be tested for 2190 hours per year (2190=1.5/6*8760) with the most common capacity of 76.1 gal/hr.

EU04 Engines greater than 1500 horsepower (HP):

Emission factors based on AP-42 Table 3.4-1. NOx emission factor is Nonroad EPA tier 4. Engines tested on the large dynos are tested for 3 hours. It takes about 4.5 hours to change out the engines for testing. Thus, the engines can be tested for 3504 hours per year (3504=3.0/7.5*8760) with the most common capacity of 202.9 gal/hr.

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, is not applicable to stationary compression ignition (CI) internal combustion engines (ICE) being tested at a stationary CI ICE engine test cell/stand. Since Engine Testing (EU03, 04 & 05) is considered an engine test cell/stand, this subpart does not apply. [40 CFR 60.4200(b)]

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, does not apply to this engine test station, because this subpart does not apply to the stationary RICE which is being tested at a stationary RICE test cell/stand according to 40 CFR 63.6585.

Emission Unit 06 (06) Spray Coating Operation (Head Paint Booth) Emission Unit 07 (07) Spray Coating Operation (Large Paint Booth)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
VOC	Source wide 90 tpy	To preclude 401 KAR 52:020 & 401 KAR 51:017	Material Balance & SDS	Record Keeping and 12 month rolling total
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & SDS with 65% Transfer Efficiency	Polyester Filters with 99.9 % C.E., Manufacturer's guarantee
	20% opacity	401 KAR 59:010, Section 3(1)a	N/A	Recordkeeping of weekly visual observation
Individual HAP	Source wide 9.0 tpy	To preclude 401 KAR 52:020	Material Balance & SDS	Record keeping and 12 month rolling total
Combined HAP	Source wide 22.5 tpy	To preclude 401 KAR 52:020	Material Balance & SDS	Record keeping and 12 month rolling total
Naphthalene	Source wide 1.414 tpy	401 KAR 63:020, Section 3	Material Balance & SDS	Record keeping and 12 month rolling total

Initial Construction Date: EU06: proposed 5/2025; EU07: proposed 5/2025

Process Description:
Engine heads to be coated continuously in the paint booth will be no pretreatment prior to entry. The head paint booth and large paint booth are capable of handling one gun for each booth at a time. HVLP guns with a maximum design application rate of 11.63 gal/hr will be used in head paint booth and large paint booth. All paint materials as applied are the mixture of multiple coating materials.

Applicable Regulation:

401 KAR 59:010, *New Process Operations*. This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

State-Origin Requirements:

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.* is applicable to each affected facility or source which emits or may emit potentially hazardous matter or toxic substances provided such emissions are not subject to another emission standard with respect to hazardous matter emissions commenced after April 9, 1972.

Precluded Regulations:

401 KAR 63:002, Section 2(4)(rrr), 40 C.F.R. 63.3880 through 63.3981, Tables 1 through 5, and Appendix A (Subpart MMMM), *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products, is applicable to miscellaneous metal parts and products surface coating operations*. Since the source has accepted emission limits pertaining to single and combined HAP(s), which classifies the facility to be a Conditional Major source, this subpart is to

Emission Unit 06 (06) Spray Coating Operation (Head Paint Booth)
Emission Unit 07 (07) Spray Coating Operation (Large Paint Booth)

be precluded.

401 KAR 59:225, *New miscellaneous metal parts and products surface coating operations*. This regulation is to be precluded since the source has accepted emission limits pertaining to VOC, which would not be as a major source. And the source is not located in a county designated as nonattainment for ozone.

Comments:

There is a flash-off tunnel after Head Booth (EU06). All emissions from the flash-off tunnel are accounted for in paint booth EU06. Type of paint guns are HVLP with 65% transfer efficiency. Polyester Filters with 99.9 % control efficiency are guaranteed by the manufacturer. The pressure drop range is 0.12 in. H2O for each filter.

401 KAR 63:002, Section 2(4)(iiiii), 40 C.F.R. 63.11169 through 63.11180, Table 1 (Subpart HHHHHH), *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.* This regulation is not applicable since facility does not use coatings with the target HAPs (chromium, lead, manganese, nickel or cadmium).

Insignificant Activity #17 Plasma Cutting

Initial Construction Date: Proposed 4/2025

Process Description:
Plasma cutting will be used for repairing the engines. The model of plasma cutter is Spectrum 875.

Applicable Regulation:
401 KAR 59:010, *New process operations.*

State-Origin Requirements:
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.*

Comments:
Filter with 70% control is integral and 70% control is assumed for building enclosure.

401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 through 63.11523, Tables 1 through 2 (Subpart XXXXXX), *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories* does not apply to plasma cutting as stated in the response to question 35 in Nine Metal Fabrication and Finishing Area Source Categories 40 CFR Part 63 Subpart XXXXXX (6X) NESHAP Questions & Answers Revised June 2020. https://www.epa.gov/sites/default/files/2020-06/documents/qa-6x-9metal-fabricationfinishing-areaneshap-06-22-20.pdf

Insignificant Activity #18 Blasters (4 units)

Initial Construction Date: Proposed 4/2025

Process Description:
Abrasive blasting will be operated by two blasters and one dry plastic media blaster with 2 units.

Applicable Regulation:
401 KAR 59:010, *New process operations.*

Comments:
Filter is factored into the emission factor. Assumed filter with 90% control efficiency for particulate matters.

401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 through 63.11523, Tables 1 through 2 (Subpart XXXXXX), *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories* does not apply because the process does not have the potential to emit MFHAP [40 CFR 63.11516(a)].

Insignificant Activity #21 Spray Welder

Initial Construction Date: Proposed 4/2025

Process Description:
Thermal spraying will be used to repair metal surfaces.

Applicable Regulation:
401 KAR 59:010, *New process operations.*

State-Origin Requirements:
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.*

Comments:
Filter with 99% particulate matter control efficiency. PM factor with 80% Transfer Efficiency is assumed.

401 KAR 63:002, Section 2(4)(iiiii), 40 C.F.R. 63.11169 through 63.11180, Table 1 (Subpart HHHHHH), *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources,* is not applicable because the definition of "spray-applied coating operations" does not include thermal spray operations [40 CFR 63.11180 "Spray applied coating operations"].

Insignificant Activity #22, #23 and #24 Mig Welders (4 units)

Initial Construction Date: Proposed 4/2025

Process Description:
Gas metal arc welding operations will be conducted for repairing the engines and equipment.

IA 22 Mig Welder (Delta Weld), GMAW operation with a throughput at 0.0571 lb/hr
IA 23 (2) Mig Welders (Matic 251), GMAW operation with a throughput at 0.114 lb/hr per unit
IA 24 Mig Welder (Matic 252), GMAW operation with a throughput at 0.0571 lb/hr

Applicable Regulation:
401 KAR 59:010, *New process operations.*

State-Origin Requirements:
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances.*

Comments:
Filter with 70% control efficiency. Use PM and HAP emission factors from E70S electrode types.

401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 through 63.11523, Tables 1 through 2 (Subpart XXXXXX), *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories* is not applicable since the materials using in welding operation contain chromium, or nickel in amounts less than 0.1 percent by weight and manganese in amounts less than 1.0 percent by weight, and the operation will be used for repairing equipment [40 CFR 63.11514(b)&(f)].

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
N/A										

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of VOC emissions	To preclude 401 KAR 52:020 & 401 KAR 51:017	Source-wide
9.0 tpy of individual HAP emissions	To preclude 401 KAR 52:020	Source-wide
22.5 tpy of combined HAP emissions	To preclude 401 KAR 52:020	Source-wide
1.414 tpy of Naphthalene emissions	401 KAR 63:020, *Potentially hazardous matter or toxic substances*	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010, *New process operations.*	EU 06 & 07
401 KAR 59:015, *New Indirect Heat Exchangers*	EU 01 & 02
401 KAR 63:020, *Potentially hazardous matter or toxic substances.*	EU 01, 02, 03, 04, 05, 06, &07

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 51:017, *Prevention of significant deterioration of air quality*	Source-wide
401 KAR 52:020, *Title V permits*	Source-wide
401 KAR 59:225, *New miscellaneous metal parts and products surface coating operations*.	EU 06, & 07
401 KAR 63:002 Section 2(4)(rrr), 40 C.F.R. 63.3880 through 63.3981, Tables 1 through 5, and Appendix A (Subpart MMMM), *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products*	EU 06, & 07
401 KAR 63:002 Section 2(4)(tttt), 40 C.F.R. 63.9280 through 63.9375, Tables 1 through 7 (Subpart PPPPP), *National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands*	EU 03, 04, & 05

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
N/A	

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has performed modeling using SCREEN View on January 4, 2025 of potentially hazardous matter or toxic substances (Ethyl Benzene, Cumene, Naphthalene, Toluene, Trimethyl Benzene (Total), Naphtha, 2-Butoxy Ethanol, Heptane and Xylenes) and AERMOD on January 4, 2025 potentially hazardous matter or toxic substances (Ethyl Benzene, Naphthalene, Trimethyl Benzene, Manganese, Nickel, and Chromium (III)) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination
N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
N/A						

SECTION 6 – PERMIT APPLICATION HISTORY

None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAM – Compliance Assurance Monitoring
CO – Carbon Monoxide
Division – Kentucky Division for Air Quality
ESP – Electrostatic Precipitator
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NO_x – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds