S.C. Department of Health and Environmental Control

Bureau of Air Quality
Prevention of Significant Deterioration
Final Determination

Scout Motors Inc A Delaware Corporation - Blythewood Plant
437 Blythewood Road
Blythewood, South Carolina 29016
Richland County

Permit No. PSD-50000007 v1.0
Agency Air Number: 1900-0350
October 31, 2023

This review was performed by the Bureau of Air Quality of the South Carolina Department of Health and Environmental Control in accordance with South Carolina Regulations for the Prevention of Significant Air Quality Deterioration.

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1.0 Timeline (Permitting Action History)

April 18, 2023	A Prevention of Significant Deterioration (PSD) pre-application meeting was held with representatives from Scout Motors Inc A Delaware Corporation - Blythewood Plant, Trinity Consultants, and the South Carolina Department of Health and Environmental Control (SC DHEC), Bureau of Air Quality (BAQ).
June 1, 2023	SC DHEC received a PSD permit application from Scout Motors Inc A Delaware Corporation - Blythewood Plant
June 12, 2023	Air Permitting of BAQ mailed a copy of the application to Lorinda Shepherd of the Environmental Protection Agency (EPA) and informed him that BAQ had deemed the application complete.
June 12, 2023	Air Permitting of BAQ mailed out to Catherine Collins, Gisele Majidi-Weese. Denesia Cheek, Don Shepherd, and Kristen King letters informing them that BAQ was in receipt of and was currently reviewing a PSD application from Scout Motors Inc A Delaware Corporation - Blythewood Plant.
June 14, 2023	Air Permitting of BAQ received email correspondence from Gisele Majidi-Weese of the US Forest Service with comments on the original application.
July 28, 2023	Air Permitting of BAQ received email correspondence from Jaqueline Summers-Evans of EPA with comments on the original application.
August 3, 2023	Air Permitting of BAQ received email correspondence from Andrea Stacy of the national park service with comments on the original application.
September 7, 2023	The BAQ placed the PSD Preliminary Determination and PSD Construction Permit No. PSD-50000007 v1.0 on public notice from September 7, 2023 to October 18, 2023. All appropriate Federal and State Officials were notified.
September 28, 2023	The BAQ received an email from Jacqueline Summers-Evans of the EPA stating that the EPA had reviewed the drafts and had no comments.
October 12, 2023	The BAQ held a public hearing to accept written and verbal comments on the proposed project.
October 18, 2023	The public notice period closed with comments received from the public.
October 30, 2023	The BAQ issued a Final Determination and Construction Permit No. PSD-50000007.

2.0 Introduction

Due to emissions increases associated with this proposal, the project is subject to S.C. Regulation 61-62.5, Standard No. 7, "Prevention of Significant Deterioration (PSD)." This regulation is equivalent to the Federal Prevention of Significant Deterioration of Air Quality regulations in Title 40 Code of Federal Regulations (CFR) Section 52.21. Pursuant to these regulations, new major stationary sources and modifications to major stationary sources of air pollution must demonstrate that they will not significantly deteriorate the air quality in their region. The facility has potential emissions for the pollutants listed in Table 1 below, which exceed the significance levels allowed in this regulation. The PSD review was conducted for each of these pollutants and includes Best Available Control Technology (BACT) determinations and Ambient Air Impact Analyses.

As shown in Table 1, this project exceeds the significant threshold as defined under PSD for each pollutant listed.

Table 1 - PSD Applicability Analysis

Pollutant	Controlled Emissions Increase	PSD Significant Threshold	Significant Increase?
	TPY	TPY	
PM	39.92	25	Yes
PM_{10}	15.46	15	Yes
$PM_{2.5}$	10.64	10	Yes
SO_2	2.61	40	No
NO_X	117.09	40	Yes
CO	99.72	100	No
VOC	1,371.89	40	Yes
Lead	1.19E-3	0.6	No
CO_2e	287,290	75,000	Yes
Fluorides	--	3.0	No

3.0 Detailed Process Description

Automobile Stamping Plant

In the stamping plant, cranes move aluminum coils onto a blanking press. The blanking press then presses, flattens, straightens, and cuts the aluminum into the basic shape, called a "blank", to be used for other parts. Small quantities of a blank wash compound are applied to the sheet metal prior to stamping to lubricate the steel and provide a smooth finish. Blank are fed into the press line and are shaped and trimmed to form the finished sheet metal part. The presses use a series of dies or steel molds to form the desired shape. These dies are placed in hydraulic stamping machines where the metal parts are produced under significant force. The stamped parts are washed with a detergent and then inspected before placing them on racks. The parts are temporarily stored until needed in the body shop. The blank wash and detergent materials contain no volatile organic compounds. Therefore, no emissions are expected from these materials.

Automotive Assembly Plant

The automobile assembly facility will operate a body shop, a paint shop, and an assembly shop as part of the automobile assembly operation. The following sections provide details on the operations of the proposed facility.

Body Shop

In the body shop, parts are assembled to form the "body-in-white", including stamped parts, the front-end subassembly, the rear-end subassembly, the side frame subassembly, the underbody subassembly, the mid and upper-body assembly, and panels. Parts are joined using welds, solder, adhesives, and rivets. At the end of the body shop process, the "body-in-white" is lifted onto a conveyor and sent to the paint shop. No PM emissions are expected for spot welding, since spot welding involves no consumable welding material. PM emissions are expected from welding and soldering. In addition, CO2 shield gas is used in the welding operations, which results in emissions of CO2. It is assumed that 95% of VOC from adhesive use is controlled through the E-coat oven abatement.

Paint Shop

The paint shop will be designed as a full, high-volume operation to meet Scout requirements, The maximum production rate will be 45 vehicles per hour (45 jobs per hour or 45 JPH) during the first phase of the project and an additional 45 JPH during the second phase of the project, for a throughput capacity of 90 JPH. The facility will be designed to operate up to three shifts per day with a potential production level of 470,000 vehicles annually. The paint shop will receive vehicle bodies from the body shop and will deliver coated bodies to the assembly shop. The paint shop will include the operations described in the following subsections.

Degreasing and Pretreatment

As the first step in the coating process, all vehicle body surfaces must be cleaned and treated in degreasing and pretreatment operation to maximize paint adhesion. Vehicle bodies are cleaned with alkaline cleaners followed by water rinses. The vehicle bodies are then pre-treated in a tri-cation phosphate solution followed by additional water rinses. The pretreatment solution prepares

the metal (aluminum and steel) surfaces for the subsequent coating operations. The pretreatment tanks are exhausted to vent water vapor. There is no quantifiable basis for estimating emissions and no VOCs are expected to be emitted from the pretreatment operations.

E-Coat Tank and Oven

The first coating applied to the vehicle bodies is electrocoat primer (E-coat). Vehicle bodies are dipped into one (1) of two (2) E-coat dip tanks of the water-borne E-coat made up of mixed pigment and resin components. While the bodies are in the tank, an electrical charge is applied that assists in the adhesion of paint solids onto all portions of the vehicle body (interior and exterior surfaces). Following the coating application, the vehicle bodies are rinsed with water to remove and recover any excess or additional coating solids. The vehicle bodies are then directed to an electric E-coat oven. The vehicle bodies are cured in the oven to prepare for the next coating application. Each E-coat process line will have two (2) electric E-coat ovens with a capacity of 22.5 JPH. Emissions from the E-coat dip tanks are uncontrolled, while emissions from the E-coat ovens are directed to electric RTOs. A destruction efficiency of 95% has been assumed for the E-coat oven emissions.

PVC Deck

A polyvinyl chloride (PVC) anti-chip material is applied to the vehicle lower body to prevent paint chipping due to stones or other objects hitting the vehicle. The PVC material is a low-VOC, high-solids material that is robotically applied to the vehicle body and air dried. It is assumed that 30% of the VOC in the PVC material is emitted from the PVC deck. Following PVC application, the vehicle bodies pass through the sealer ovens. It is assumed that 70% of the VOC in the PVC material is emitted within the sealer ovens. The sealer oven emissions are controlled by an RTO with a 95% destruction efficiency.

Paint Sealer and Deadener Deck and Oven

The paint sealer and deadener application deck consist of several sealer application stations where various high-solids, low-VOC sealers and liquid sound deadeners are applied via manual or robotic applications. All applications are pumped directly onto the vehicle bodies (flow coating) to seal seams in the vehicle body to eliminate water or air leaks into the vehicle body. To prepare the sealer prior to topcoat application, the vehicle bodies are directed to electric sealer ovens to gel the sealers. For the purposes of emission calculations, it is assumed that 30% of the VOC emissions are released from the sealer deck uncontrolled, while the remaining 70% of the VOC in the sealer is emitted within the sealer ovens.

Topcoat Preparation (Workdeck)

After the sealer ovens, the vehicle bodies pass to a topcoat preparation area where the vehicle surface is cleaned using emu feathers and sword brushes. Emissions from the topcoat preparation area are minimal and are estimated based on an outlet grain loading rate and airflow from the topcoat preparation area.

Topcoat Operations

Following the E-coat, sealer, and PVC operations, the vehicle bodies are directed to basecoat booths (two booths at 22.5 JPH for each line, for a total of four booths) where basecoat is applied

to the vehicle body. This process is unique within the industry, as no primer (guidecoat) is applied to the vehicles prior to the application of basecoat. Following the basecoat booths, the vehicles are dried in a heated flash-off zone, and then move into clearcoat booths (two booths at 22.5 JPH for each line, for a total of four booths). The materials applied to the vehicle body will be high-solids, solvent-based coatings which allow for the painting application in smaller booths. The topcoat (basecoat and clearcoat) booths will apply two (2) basecoats and one (1) clearcoat to all exterior portions of the vehicle body as well as the door, decklid, and hood openings.

All paint applications will be performed by robotic and bell applicators. The air passing through each of the automated paint spray application zones will pass through a dry filtration system (inherent) and will then be recirculated through the zones to minimize the need to condition air (heating/cooling) before entering the booth. At all times during production, the air passing through the active spray zones will be recirculated and a portion of the air will be directed to abatement equipment (the concentrators and RTOs). The make-up air to replace the air directed to control will cascade from the air supplied to the back-up zones where available. Therefore, the air passing through all flash and back-up zones where no painting occurs is also directed to the abatement equipment. As a result, all of the VOC emissions emitted from the active spray zones as well as the VOC emitted from vehicle bodies as they pass through the flash or back-up zones will be directed to the abatement equipment. During maintenance periods, the topcoat booths are cleaned with equipment cleaners and VOC emissions vent to atmosphere through bypass stacks.

Emissions from the cleaning process are uncontrolled. Although 100% of the booth exhaust will be directed to abatement equipment during production, the booth does not meet the definition of Permanent Total Enclosure as the facial velocity at the entrance and exit of the system is less than 200 feet per minute, As such, Scout has assumed a small percentage of emissions would not be directed to the abatement equipment in its emission calculations even though all of the exhaust air and ducts are directed to the abatement equipment. Each painting robot station will be equipped with a purge pot collection system to capture and recover paint and solvents from the application equipment during color changes and applicator cleaning operations, The vehicle bodies will then be directed to the electric topcoat ovens (two ovens for each topcoat line, for a total of four ovens) where the applied coatings will be cured. All exhaust air from the ovens will be directed to the RTOs.

Finesse, Rework and Heavy Repair (Workdecks)

After the topcoat ovens, the vehicle bodies move to inspection areas and then finesse decks where any imperfections in the cured topcoat are lightly sanded. Further rework is completed in the designated rework line. Larger repairs are completed in a heavy repair work deck. Emissions from the sanding, rework and heavy repair operations are minimal and are estimated based on an outlet grain loading rate and airflow from these areas.

Tutone Operations

In addition to the above-described operations, a number of vehicles will receive additional coatings in the Tutone booths. Following E-coat, PVC, sealer, and topcoat operations, those vehicles slated for Tutone will receive a basecoat and Tutone application on limited portions of the vehicle, cure in a heated basecoat flash off zone, and receive a clearcoat application on limited portions of the

vehicle. The Tutone process uses applicators that directly apply the coating to the vehicles without atomization or spray, resulting in nearly 100% transfer efficiency. This technology can only be used for the larger surfaces that require the Tutone coating. The air passing through each of the Tutone application zones will pass through a dry filtration system and will then be recirculated through the zones to minimize the need to condition air (heating/cooling) before entering the booth. At all times during production, air passing through the Tutone active spray zones will be recirculated and a portion will be directed to abatement equipment (the concentrators and RTOs); the make-up air to replace the air directed to control will be cascaded from the air supplied to the back-up zones where available. Therefore, the air passing through the flash tunnels and back-up zones where no painting occurs is also directed to the abatement equipment. As a result, all of the VOC emissions emitted from the Tutone application zones as well as the VOC emitted from vehicle bodies as they pass through all flash tunnels and back-up zones will be directed to the abatement equipment. During maintenance periods, the Tutone booth is cleaned with equipment cleaners and VOC emissions vent to atmosphere through bypass stacks. Emissions from the cleaning process are uncontrolled. The vehicle bodies will then be directed to the Tutone oven where the applied coatings will be cured. AII of the exhaust air from the Tutone oven will be directed to the RTOs.

Purge Solvent

Purge solvent is used to remove coating material from application equipment. A purge solvent collection system is required to collect purge solvent from the application areas. The system then pumps the recovered solvent to the paint mix room for reuse or shipment off-site.

Spot Repair

If a body panel or spot requires painting prior to existing the paint shop, the vehicle is sent to spot repair. In the spot repair process, primer, basecoat, and clearcoat are manually applied, and the coatings are cured with portable lamps within the booth. The air supply units provide filtered make-up air for the spot repair booths. Exhaust air is filtered using dry overspray filters and is vented to the atmosphere.

Cavity Wax

After inspection and any necessary repairs, vehicle bodies are transferred to booths where cavity wax is applied to inner recesses of the vehicle bodies. Process exhaust from all cavity wax application areas will be vented to atmosphere. It is assumed that all cavity wax is either transferred to the vehicles or to surfaces within the cavity wax booth. Therefore, there are no particulate matter emissions estimated for the cavity wax application process.

Paint Mix Room

Paints, reducing solvents, purge solvents, and cleaning solvents will be stored, mixed, and dispensed in the paint mix room. These materials are supplied in drums or totes and fed to closed mix tanks for viscosity adjustment. The paints are pumped through continuously circulating paint lines from the mix tanks to the application equipment. The systems are designed to minimize VOC emissions during the use or mixing of paints and solvents.

Abatement Equipment

The VOC emissions from the E-coat tank and oven, topcoat booths, topcoat booths, Tutone booths, and Tutone ovens as described above will be directed to two (2) RTOs for VOC destruction. Each RTO will operate with a minimum destruction efficiency of 95%. The RTOs will be electric and will not require fuel combustion.

Assembly Shop

The assembly shop is a series of conveyors where mechanical, electrical, and trim parts are installed on the painted bodies received from the paint shop. The major areas of the assembly shop operations include the floor line, trim line, chassis/battery line, and final repair. Most operations conducted in these areas do not generate any air emissions, including installation of sound-deadeners, and brake lines, as well as installation of various small parts, carpeting, seats, windows, bumpers, and wheels. The air emission sources in the assembly shop are described in the following sections.

Windshield Installation

Windshield glazing activities include the application of primers and adhesives. A primer is used in the direct glazing process and an adhesive binds the windshield to the car body. VOC emissions associated with the windshield installation are exhausted through the roof.

Final Repair

Final inspection may reveal damage to the painted surface. If a body panel or spot requires painting, the vehicle is sent to final repair. This repair operation differs from the repair operations in the paint shop in that it is designed to repair finished vehicles. Small spot repairs will be conducted in various areas within the assembly shop, while larger repairs will be conducted within a repair booth. In final repair, primer, basecoat, and clearcoat are applied using high volume low pressure (HVLP) spray guns. Overspray particulate emissions in the repair booth are controlled using dry filtration. No overspray particulate emissions are expected from the small spot repair operations throughout the assembly area. After necessary repairs have been completed, vehicles are buffed, polished, and sent to staging for delivery to dealers. VOC emissions from polish are exhausted through general building ventilation.

Fluid Filling

After the installation of mechanical, electrical, and trim components, the vehicle is sent for the addition of necessary fluids. Fugitive emissions from ethanol-based windshield washer fluid filling are exhausted through general facility ventilation and represent the only fluid filling emissions. Any other fluids have negligible vapor pressure and do not emit VOCs.

Support Operations

Combustion Sources

The stamping area, body shop, paint shop, and assembly shop will be heated by natural gas-fired rooftop units.

Fluid Storage

The facility will utilize storage tanks for materials utilized at the facility, including windshield washer fluid, purge solvent, and diesel fuel. All storage tanks are aboveground storage tanks (ASTs). A detailed list of tank contents and sizes for tanks with VOC emissions is provided in the air quality permit application forms.

Miscellaneous Cleaning Solvents

In addition to the purge solvents used in the paint-shop, various cleaning solvents are used throughout the facility. VOC emissions from cleaning solvents are emitted through general building ventilation.

Cooling Towers

Cooling towers will be utilized to provide process cooling to process operations.

Emergency Generators and Fire Pump

The proposed facility will include diesel-fired emergency fire pumps and emergency generators for emergency events.

Paved Roads

Paved roads will be utilized by utility trucks to deliver raw materials and ship final products and will also be utilized by production vehicles.

4.0 Regulatory Applicability

The construction of the facility results in potential emissions that exceed the PSD significant thresholds. By virtue of the proposed increase, this project is subject to review under the following standards in S.C. Regulation 61-62 and Federal standards:

- S.C. Regulation 61-62.5, Standard No. 2, *Ambient Air Quality Standards*
- S.C. Regulation 61-62.5, Standard No. 3, *Waste Combustion and Reduction*
- S.C. Regulation 61-62.5, Standard No. 4, *Emissions from Process Industries*
- S.C. Regulation 61-62.5, Standard No. 7, *Prevention of Significant Deterioration*
- S.C. Regulation 61-62.6, *Control of Fugitive Particulate Matter*
- S.C. Regulation 61-62.7, *Good Engineering Practice Stack Height*
- S.C. Regulation 61-62.60, *South Carolina Designated Facility Plan and New Source Performance Standards*
- S.C. Regulation 61-62.60 and 40 CFR 60, *Standards of Performance of New Stationary Sources*, Subpart A, *General Provisions*
- 40 CFR 60, *Standards of Performance of New Stationary Sources*, Subpart MMa, *Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations for which Construction, Modification or Reconstruction Commenced After May 18, 2022)*
- 40 CFR 60, *Standards of Performance of New Stationary Sources*, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*
- S.C. Regulation 61-62.63 and 40 CFR 63, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories*, Subpart A, *General Provisions*
- 40 CFR 63, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories*, Subpart IIII, *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks*
- 40 CFR 63, *National Emission Standards For Hazardous Air Pollutants For Source Categories*, Subpart ZZZZ, *National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines*

S.C. Regulation 61-62.70, *Title V Operating Permit Program*

5.0 Final Determination

On September 7, 2023, the BAQ made a preliminary determination that Scout Motors Inc A Delaware Corporation - Blythewood Plant (Scout Motors) may construct an automobile stamping and assembly facility if the emission limitations and conditions as outlined in the draft PSD Construction Permit PSD-50000007 v1.0 are met. This draft construction permit was included as part of the Preliminary Determination. The Statement of Basis that contains explanations of the permitting actions was also included as a part of the Preliminary Determination. The public comment period closed on October 18, 2023. No comments were received from the United States Environmental Protection Agency (EPA), the Federal Land Manager(s), or Scout Motors.

The comments were received from the public but were found to have no technical merit. No changes to the draft documents or determinations were made. For a summary of the comments and the Department's responses, see accompanying document *Response to Comments on Air Quality*.

BAQ has made a final determination that the Scout Motors Inc A Delaware Corporation - Blythewood Plant proposed project may be approved provided that the emission limitations and condition as outlined in Construction Permit No. PSD-50000007 v1.0 are met. A copy of the final issued construction permit is included as part of this Final Determination.

The final BACT determinations are summarized in Table 2.

Table 2 - Summary of BACT

Process	Pollutant	BACT Control Method	BACT Limit
Rooftop Units	PM/PM_{10}/$PM_{2.5}$	Use of natural gas Good Combustion Practices	0.0005 lb/MMBtu PM/PM_{10} 0.0004 lb/MMBtu $PM_{2.5}$
Topcoat/Tutone	PM/PM_{10}/$PM_{2.5}$	99.5% efficient dry filter	1.0 mg/m^3
Spot and Assembly Repair	PM/PM_{10}/$PM_{2.5}$	98.5% efficient dry filter Good Work Practices	0.075 lb/hr
Emergency Engines	PM/PM_{10}/$PM_{2.5}$	Compliance with NSPS IIII	Limits consistent with 40 CFR 63 Subpart ZZZZ
Body Shop	PM/PM_{10}/$PM_{2.5}$	98.5% efficient dry filter	0.04 lb/hr
Cooling Towers	PM/PM_{10}/$PM_{2.5}$	Drift eliminator	0.001% drift rate
Work Decks	PM/PM_{10}/$PM_{2.5}$	Good Work Practices	--
Roads	PM/PM_{10}/$PM_{2.5}$	Paved and maintaining roads	--
Rooftop Units	VOC	Good Combustion Practices	0.0054 lb/MMBtu
E-Coat	VOC	Oven – RTO Use of low VOC materials	0.23 lbs/GACS
Sealer, Adhesive and Underbody PVC	VOC	Use of low VOC materials	0.25 lbs VOC/gal
Topcoat/Tutone	VOC	Booth - RTO with	3.53 lbs/GACS

Table 2 - Summary of BACT			
Process	**Pollutant**	**BACT Control Method**	**BACT Limit**
		concentrator Oven - RTO	
Paint Shop / Assembly Spot Repair	VOC	Use of low VOC materials	4.8 lbs VOC/gal
Cavity Wax	VOC	Use of low VOC materials Good Work Practices	1.0 lbs VOC/gal
Purge Solvent	VOC	Use of low VOC materials Good Work Practices Control device where possible	385.82 tpy
Cleaning Solvent	VOC	Use of low VOC materials Good Work Practices	58.8 tpy
Vehicle Polish	VOC	Use of low VOC materials Good Work Practices	3.37 tpy
Body Shop Adhesives	VOC	RTO	0.0005 lb VOC/lb coating
Window and Windshield Glazing / Mounting	VOC	Use of low VOC materials Good Work Practices	0.4 lb VOC/gal
Emergency Engines	VOC	Compliance with 40 CFR 60 Subpart IIII	Limits consistent with 40 CFR 63 Subpart ZZZZ
Storage Tanks	VOC	Good Work Practices	--
Paint Mix Room	VOC	Good Work Practices	--
Fluid Fill	VOC	Good Work Practices	--
Rooftop Units	NOx	Use of low-NOx burners Good Combustion Practices	0.043 lb NOx/MMBtu
Emergency Engines	NOx	Compliance with NSPS IIII	Limits consistent with 40 CFR 63 Subpart ZZZZ
Rooftop Units	CO_2e	Use of natural gas Good Combustion Practices	118 lb CO_2e/MMBtu
Emergency Engines	CO_2e	Compliance with NSPS IIII	164 lb CO_2e/MMBtu
Body Shop	CO_2e	Good Work Practices	--