

State Registration Number

B1606

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

MI-ROP-B1606-2020

General Motors LLC - Flint Assembly, Flint Metal Center, Flint Engine Operations

State Registration Number (SRN): B1606

Located at

Flint Assembly, G-3100 Van Slyke, Flint, Genesee County, Michigan 48551

Flint Metal Center, G-2238 Bristol Road, Flint, Genesee County, Michigan 48553

Flint Engine Operations, 2100 West Bristol Road, Flint, Genesee County, Michigan 48552

Permit Number: MI-ROP-B1606-2020

Staff Report Date: July 27, 2020

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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JULY 27, 2020 - STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

| | |
|---|--|
| Stationary Source Mailing Address Section 1: | General Motors LLC, Flint Assembly Plant G-3100 Van Slyke Road Flint, Michigan 48551 |
| Stationary Source Mailing Address Section 2: | General Motors LLC, Flint Metal Center G-2238 Bristol Road Flint, Michigan 48553 |
| Stationary Source Mailing Address Section 3: | General Motors LLC, Flint Engine Operations 2100 W. Bristol Road Flint, Michigan 48552 |
| Source Registration Number (SRN): | B1606 |
| North American Industry Classification System (NAICS) Code: | 336112 Flint Assembly (Section 1) 336370 Flint Metal (Section 2) 336112 Flint Engine (Section 3) |
| Number of Stationary Source Sections: | 3 |
| Is Application for a Renewal or Initial Issuance? | Renewal |
| Application Number: | 201800147 |
| Responsible Official Section 1: | Michael O. Perez, Plant Executive Director Flint Assembly Plant, 810-236-1393 |
| Responsible Official Section 2: | Victor P. Pereira, Plant Director Flint Metal Center, 810-236-2505 |
| Responsible Official Section 3: | Tamberlin Golden, Plant Director Flint Engine Operations, 810-236-9705 |
| AQD Contact: | Robert Byrnes, Senior Environmental Engineer 517-275-0439 |
| Date Application Received: | November 20, 2018 |
| Date Application Was Administratively Complete: | November 20, 2018 |
| Is Application Shield in Effect? | Yes |
| Date Public Comment Begins: | July 27, 2020 |
| Deadline for Public Comment: | August 26, 2020 |

Source Description

General Motor's Flint Assembly (FA) plant is principally involved in the manufacturing of light-duty trucks. Significant emission sources at the facility include VOC emissions from the application of primer and topcoat coatings to truck bodies. These emissions are controlled with six regenerative thermal oxidizers. In addition, the facility has two natural gas fired hot water heaters, each less than 5 million BTU per hour heat input, and Five (5) 8 million BTU per hour natural gas fired hot water generator/boilers that will be utilized in the pretreatment operations of the paint shop.

The General Motors Flint Metal Center (FMC) is principally involved in the stamping, welding and assembly of various automobile and light duty truck metal body parts.

The General Motor's Flint Engine Operations (FEO) contain numerous metal machining operations to manufacture parts for engines. Parts are subsequently cleaned to remove coolants and lubricants. Emissions of metal particulates and liquid coolants or lubricants are controlled by filtration devices, before being exhausted to the outside environment. Engine parts are then assembled, with the use of sealers. Subassemblies of parts may undergo final assembly, before engines are shipped offsite.

General Motors (GM) has requested the inclusion of FEO and FMC plants in this ROP Renewal as all 3 are under common control, located at contiguous or adjacent property. Flint Assembly (B1606) and Flint Engine Operations (B1607) share the same 2 digit SIC Code. Flint Metal Center (B1608) does not share the same 2 digit SIC Code but 40 to 45% of future production output is anticipated to support FA manufacturing operations. This is approaching the 50% support facility level as described in AQD Policy Memo AQD-011. Although less than 50% goes to a single facility, Flint Assembly is the largest customer of stamping for FMC operations for FA. As such, GM has elected to classify FMC as a support facility and included it in the ROP Renewal.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2019**.

TOTAL STATIONARY SOURCE EMISSIONS

| Pollutant | Tons per Year |
|--|----------------------|
| Carbon Monoxide (CO) | 45.7 |
| Lead (Pb) | 0.0 |
| Nitrogen Oxides (NO _x) | 56.9 |
| Particulate Matter less than 10 microns (PM10) | 7.9 |
| Particulate Matter less than 2.5 microns (PM2.5) | 7.3 |
| Sulfur Dioxide (SO ₂) | 0.3 |
| Volatile Organic Compounds (VOCs) | 306.3 |

The Hazardous Air Pollutant emissions for this facility are not required to be calculated on an annual basis:

| Pollutant | Tons per Year |
|--|-----------------------|
| Individual Hazardous Air Pollutants (HAPs) ** | Not Calculated |
| Total Hazardous Air Pollutants (HAPs) | Not Calculated |

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is in Genesee County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of Volatile Organic Compounds and Oxides of Nitrogen exceeds 100 tons per year and the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

All sources at the stationary source was subject to review under the Prevention of Significant Deterioration regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality, because at the time of New Source Review permitting the potential to emit of Volatile Organic Compounds was greater than 250 tons per year.

EU-ECOAT and EU-THREE WET at the stationary source are subject to the Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations promulgated in 40 CFR Part 60, Subparts A and MM. However, these requirements have been subsumed as described in the Streamlined/Subsumed Requirements listed in the table below.

EU-PRETREATMENT, EU-ECOAT, EU-SEALERS & ADHESIVES, EU-THREE WET, EU-SOUND DAMP, EU-PURGE & CLEAN, EU-GLASS INSTALL, EU-FINAL REPAIR, EU-NPSPRGRECTNK, EU-WBPURGETANK, (Section 1) and EU-SEALERS (Section 2) at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Surface Coating of Automobiles and Light-Duty Trucks promulgated in 40 CFR Part 63, Subparts A and IIII.

EU-FIREPUMPENGINE#1, EU-FIREPUMPENGINE#2, EU-NATGASGENERATOR#1, EU-NATGASGENERATOR#2, EU-NATGASGENERATOR#3, EU-NATGASGENERATOR#4, EU-NATGASGENERATOR#5, EU-NATGASGENERATOR#6, EU-GENERATOR#1, EU-FIREPUMP, EU-DIESELGEN#1, EU-DIESELGEN#2, EU-FIREPUMPENG#1, and EU-FIREPUMPENG#2, at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63, Subparts A and ZZZZ.

EU-BOILER1, EU-BOILER2, EU-BOILER3, EU-BOILER4, EU-BOILER5, EU-NORTHHEATER, EU-SOUTHHEATER, EU-B-1 BOILER, EU-B-2-BOILER, at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

EU-BDYGENERATOR, EU-PSEMERGEN, EU-GAGENERATOR, EU-LOCGENERATOR, EU-SGE-EMERGEN and EU-MTAGENERATOR at the stationary source are subject to the Standards of Performance for Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ.

Portion FG-TANKS at the stationary source are subject to the Standards of Performance for Vessels for Petroleum Liquids promulgated in 40 CFR Part 60, Subparts A and K, Ka, and Kb.

The AQD's Rules 287 and 290 were revised on December 20, 2016. FG-RULE287(2)(c) and FG-RULE290 are flexible group tables created for emission units subject to these rules. Emission units

installed before December 20, 2016, can comply with the requirements of Rule 287 and Rule 290 in effect at the time of installation or modification as identified in the tables. However, emission units installed or modified on or after December 20, 2016, must comply with the requirements of the current rules as outlined in the tables.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

The following Emission Units/Flexible Groups are subject to CAM:

| Emission Unit/Flexible group ID | Pollutant/ Emission Limit | UAR(s) | Control Equipment | Monitoring (Include Monitoring Range) | Emission Unit/Flexible Group for CAM | PAM? * |
|---------------------------------|---------------------------|---|--|--|--------------------------------------|--------|
| EU-ECOAT | VOC/ 649.6 tpy | R 336.1205 (1)(b) R 336.1702 (a) | Two Regenerative Thermal Oxidizers (RTO) | RTO temperature shall be at a minimum temperature approved in the Destruction Efficiency test which showed a minimum destruction efficiency of 95% | FG- CONTROLS | No |
| EU-ECOAT | VOC/ 4.8 tpy | R 336.1205 (1)(b) R 336.1702 (a) | Two Regenerative Thermal Oxidizers (RTO) | RTO temperature shall be at a minimum temperature approved in the Destruction Efficiency test which showed a minimum destruction efficiency of 95% | FG- CONTROLS | No |
| EU-THREE WET | VOC/ 649.6 tpy | R 336.1205 (1)(b) R 336.1702 (a) | Three RTO | RTO temperature shall be at a minimum temperature approved in the Destruction Efficiency test which showed a minimum destruction efficiency of 95% | FG- CONTROLS | No |

| Emission Unit/Flexible group ID | Pollutant/Emission Limit | UAR(s) | Control Equipment | Monitoring (Include Monitoring Range) | Emission Unit/Flexible Group for CAM | PAM? * |
|---------------------------------|--------------------------|-------------------------------------|-------------------|--|--------------------------------------|--------|
| EU-THREE WET | VOC/4.8 tpy | R 336.1205 (1)(b) R 336.1702 (a) | 3 RTO | RTO temperature shall be at a minimum temperature approved in the Destruction Efficiency test which showed a minimum destruction efficiency of 95% | FG-CONTROLS | No |

*Presumptively Acceptable Monitoring (PAM)

The RTO combustion chamber temperature was selected because it is indicative of the VOC destruction occurring within the RTO and is a widely accepted method of monitoring. If the chamber temperature decreases, the complete combustion may not occur, reducing the destruction efficiency. Therefore, the requirement to monitor temperature and maintain appropriate records is a justification for assuring VOC destruction efficiency. Temperature monitoring is specifically identified in the monitoring/recordkeeping requirements under the ROP flexible group, FG-CONTROLS.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-Wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B1606-2014 are identified in Appendix 6 of the ROP.

| PTI Number | | | |
|------------|----------|---------|---------|
| 226-80D | 1032-78A | 1013-91 | 241-83B |
| 36-15B | 173-13D | | |

Streamlined/Subsumed Requirements

The following table lists explanations of any streamlined/subsumed requirements included in the ROP pursuant to Rules 213(2) and 213(6). All subsumed requirements are enforceable under the streamlined requirement that subsumes them.

| Emission Unit/Flexible Group ID | Condition Number | Streamlined Limit/ Requirement | Subsumed Limit/ Requirement | Stringency Analysis |
|---|-------------------------|--|---|--|
| EU-ECOAT, EU-THREE WET/FG-PAINT & ASSEMBLY | SC I.1 | 4.8 lbs VOC/job (Rule 702(a) state BACT in a PTI) | 1.4 kg VOC/LAC equivalent to 11.66 lbs VOC/GAC. Standards for Volatile Organic Compounds under 40 CFR 60.392(b) | Streamlined requirement is 2.66 lbs VOC/GAC lower. |
| EU-ECOAT, EU-THREE WET, FG-PAINT & ASSEMBLY | SC I.1 | 4.8 lbs VOC/job (Rule 702(a) state BACT in a PTI) | 1.47 kg VOC/LAC equivalent to 12.24 lbs VOC/GAC. Standards for Volatile Organic Compounds under 40 CFR60.392(c) | Streamlined requirement is .04 lbs VOC/GAC lower or essentially equivalent. |
| EU-ECOAT, EU-THREE WET, FG-PAINT & ASSEMBLY | SC VI.1 | Records under SC VI.2 to calculate emissions | Performance test and Compliance provisions under 40 CFR 60.393. | Compliance provisions under these records are consistent with the Auto Protocol and are considered more stringent as they are equivalent to keeping a daily record of VOC emissions. |
| EU-ECOAT, EU-THREE WET, FG-CONTROLS | SC VI.1 | Monitoring SC VI.1 | Monitoring of emissions and operations under 40 CFR 60.394. | Monitoring of combustion chamber temperature on a continuous bases is equivalent to monitoring required under 40 CFR Subpart MM. |
| EU-ECOAT, EU-THREE WET, FG-PAINT & ASSEMBLY | SC VII.2 | Semiannual reporting of deviations under SC VII.3 & SC VII.4 | Reporting and recordkeeping requirements under 40 CFR 60.395 | Semiannual reporting of deviations is equivalent as it has more detailed information than simply reporting emissions are over or under the limit. |

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

| PTI Exempt Emission Unit ID | Description of PTI Exempt Emission Unit | Rule 212(4) Citation | PTI Exemption Rule Citation |
|------------------------------------|---|-----------------------------|------------------------------------|
| EU-BDYSHPNATGAS (Section 1) | Body Shop heater equipment | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-SPACE HEATERS (Section 2) | Natural gas-fired space heaters (also known as make-up air units) | Rule 212(4)(d) | Rule 284(2)(g)(i) |
| EU-1K-GASTANK (Section 2) | One 1000-gal aboveground gasoline storage tank | Rule 212(4)(e) | Rule 284(2)(g)(i) |
| EU-D1-GRINDING (Section 2) | Non-production Grinding at D-1 | Rule 212(4)(e) | Rule 285(2)(l)(vi)(A) |
| EU-ALSCRAP (Section 2) | Aluminum scrap transfer system | Rule 212(4)(i) | Rule 291 |
| EU-HEATERS (Section 3) | Natural gas fired space heaters | Rule 212(4)(b) | Rule 282(2)(b)(i) |
| EU-HFV6BOILER (Section 3) | Natural gas-fired PVI Hot Water Heater, 0.5 mmbtu/hr | Rule 212(4)(b) | Rule 282(2)(b)(i) |
| EU-FAMOBOILER (Section 3) | Natural gas-fired Lochinvar Hot Water Heater, 0.27 mmbtu/hr | Rule 212(4)(b) | Rule 282(2)(b)(i) |
| EU-MACHINING (Section 3) | Wet and dry production machining | Rule 212(4)(d) | Rule 285(l)(vi)(c) |
| EU-ENGCOLDTEST (Section 3) | Engine cold test process | Rule 212(4)(d) | Rule 284(2)(i) |

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by EGLE, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Brad Myott, Lansing District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

State Registration Number

B1606

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-B1606-2020

SEPTEMBER 14, 2020 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated July 27, 2020, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

| | |
|---------------------------------|--|
| Responsible Official Section 1: | Michael O. Perez, Plant Executive Director Flint Assembly Plant, 810-236-1393 |
| Responsible Official Section 2: | Victor P. Pereira, Plant Director Flint Metal Center, 810-236-2505 |
| Responsible Official Section 3: | Tamberlin Golden, Plant Director Flint Engine Operations, 810-236-9705 |
| AQD Contact: | Robert Byrnes, Senior Environmental Engineer 517-275-0439 |

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.