

Michigan Department of
Environment, Great Lakes, and Energy
Air Quality Division

State Registration Number

B4032

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

MI-ROP-B4032-2020a

General Motors LLC - Pontiac Engineering Center

State Registration Number (SRN): B4032

Located at

850 Glenwood Avenue, Pontiac, Oakland County, Michigan 48340

Permit Number: MI-ROP-B4032-2020a

Staff Report Date: February 3, 2020

Amended Date: October 4, 2022

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).

TABLE OF CONTENTS

FEBRUARY 3, 2020 - STAFF REPORT	3
MARCH 11, 2020 - STAFF REPORT ADDENDUM	9
OCTOBER 4, 2022 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION	10

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RENEWABLE OPERATING PERMIT

FEBRUARY 3, 2020 - STAFF REPORT

ROP Number

MI-ROP-B4032-2020

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:	General Motors LLC - Pontiac Engineering Center 850 Glenwood Avenue Pontiac, Michigan 48340
Source Registration Number (SRN):	B4032
North American Industry Classification System (NAICS) Code:	541380
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201900076
Responsible Official:	Holly E. Myers, Operations Director 248-857-2206 holly.e.myers@gm.com
AQD Contact:	Adam Bognar, Environmental Engineer 586-753-3744 Iranna Konanahalli, Senior Environmental Engineer 586-753-3741
Date Application Received:	
Date Application Was Administratively Complete:	April 30, 2019
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	February 3, 2020
Deadline for Public Comment:	March 4, 2020

Source Description

General Motors LLC – Pontiac Engineering Center consists of two office buildings and an engine/transmission research and development facility. The R&D facility serves as the global development center for powertrain engineering at General Motors. Air emissions arise due to the operation of 113 engine dynamometer test cells, solvent based degreasers, maintenance paint booths, natural gas fired boilers, emergency generators, miscellaneous cleaning activities, and other ancillary equipment. Emissions from the 113 dynamometer test cells are controlled by four communal regenerative thermal oxidizers.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2018**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	120.9
Lead (Pb)	0
Nitrogen Oxides (NO _x)	189.1
Particulate Matter (PM)	22.8
Sulfur Dioxide (SO ₂)	9.3
Volatile Organic Compounds (VOCs)	17.8
Total Hazardous Air Pollutants (HAPs) **	3.79

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

The following table lists individual and aggregate Hazardous Air Pollutant emissions as calculated for the year 2018 by General Motors LLC – Pontiac Engineering Center:

Pollutant	Tons per Year
Formaldehyde	0.474
Hexane	0.244
Glycol Ethers	0.218
Benzene	0.149
Total Hazardous Air Pollutants (HAPs) **	3.79

**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 Oakland County, which is currently designated by the United States Environmental Protection Agency (USEPA) as a non-attainment area with respect to the 8-hour ozone standard.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of Carbon Monoxide (CO) and Nitrogen Oxides (NO_x) exceeds 100 tons per year.

The stationary source is a “synthetic minor” source regarding HAP emissions because the stationary source accepted a legally enforceable permit condition limiting the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year.

The owner/operator of General Motors LLC – Pontiac Engineering Center has requested removal of the provisions of the National Emission Standard for Hazardous Air Pollutants for Engine Test Cells/Stands promulgated in 40 CFR Part 63, Subpart P with this ROP renewal. The stationary source accepted a legally enforceable permit condition limiting the potential to emit of HAPs to below major source thresholds. The AQD accepted this request and removed the provisions of 40 CFR Part 63, Subpart P in the draft ROP, but recognizes that USEPA’s withdrawal of its “once in, always in” policy is being challenged in court.

The owner/operator of General Motors LLC – Pontiac Engineering Center has requested removal of the provisions of 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 D with this ROP renewal. The stationary source accepted a legally enforceable permit condition limiting the potential to emit of HAPs to below major source thresholds. The AQD accepted this request and removed the provisions of 40 CFR Part 63, Subparts A and D in the draft ROP, but recognizes that USEPA’s withdrawal of its “once in, always in” policy is being challenged in court.

FG-TESTCELLMACT and FG-RACINGTCS at the stationary source were subject to review under the Prevention of Significant Deterioration regulations of 40 CFR 52.21, because at the time of New Source Review permitting the potential to emit of carbon monoxide was greater than 250 tons per year.

Flexible group FG-CINWEMERGRICEMACTNSPS>500HP (from the previous ROP) was split up into two new emission units – EU-BLDGC-GENERATOR-COMPUTER and EU-WING3-ERGGEN. This was done because EU-BLDGC-GENERATOR-COMPUTER was incorporated into the ROP from Permit to Install 309-06A and has requirements that stem from that permit. EU-WING3-ERGGEN is not subject to all conditions promulgated in Permit to Install 309-06A.

General Motors LLC – Pontiac Engineering Center plans to begin using hydrogen for hydrogen fuel cell testing. The hydrogen is to be provided by an adjacent facility that is currently under construction. The adjacent facility will not be considered a part of this stationary source provided that General Motors LLC – Pontiac Engineering Center agrees not to purchase from the adjacent facility greater than 49% of the adjacent facility’s total hydrogen production based on a 12-month rolling period. This requirement was added to the ROP under EU-FUELCELLS.

EU-PLT49FIREPUMP#3, EU-BLDGC-GENERATOR-COMPUTER, EU-WING3-ERGGEN at the stationary source are subject to the Standards of Performance for New Stationary Compression Internal Combustion Engines promulgated in 40 CFR, Part 60, Subparts A and III.

FG-BOILERS at the stationary source are subject to the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units promulgated in 40 CFR, Part 60, Subpart Dc.

FG-TANKS at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities promulgated in 40 CFR Part 63, Subparts A and C.

EU-BLDGA-GENERATOR, EU-BLDGA-NGGENERATOR, EU-BLDGBFIREPUMP, EU-BLDGB-GENERATOR, EU-BLDGC-GENERATOR, and EU-BLDGD-GENERATOR at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and Z (Z Area Source MACT). The ROP contains special conditions provided by General Motors LLC - Pontiac Engineering

Center in their application for applicable requirements from 40 CFR Part 63, Subparts A and ZZZZ. The AQD has not sought the regulatory authority for this area source MACT.

The AQD's Rules 287 and 290 were revised on December 20, 2016. FGRULE287(2)(c) and FGRULE290 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."

EU-BLDGC-GENERATOR-COMPUTER, EU-WING3-ERGGEN, EU-PLT49FIREPUMP#3, EU-FUELCELLS, FG-BOILERS, FG-RULE287(2)(c), FG-RULE290, FG-TANKS, and FG-EXISTEMERGRICEMACT do not have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the units do not have potential pre-control emissions over the major source thresholds.

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? *
FG-TESTCELLS	299.3 pph CO	R336.205 (1)(a) & (b) 40 CFR 52.21(d) 40CFR 52.21(j)	Four communal Regenerative Thermal Oxidizers (RTOs)	Minimum temperature above that established in the most recent stack test and pressure drop less than -2" water. Minimum temperature was chosen because a temperature above that established in the most recent stack test indicates that the RTO is performing as good or better than in the most recent stack test. -2" of water was chosen because it is the minimum pressure required to pull emissions through the CEES to the RTOs.	Wings 1 & 2 of FG-TESTCELLS	No
FG-TESTCELLS	285.1 tpy CO	R336.205 (1)(a) & (b) 40 CFR 52.21	Four communal Regenerative Thermal Oxidizers (RTOs)		Wings 1 & 2 of FG-TESTCELLS	No
FG-TESTCELLS	0.96 lb/MMBTU CO	R336.120 5(1)(a) & (b) 40 CFR 52.21 (j)	Four communal Regenerative Thermal Oxidizers (RTOs)		Wings 1 & 2 of FG-TESTCELLS	No
FG-TESTCELLS	14.4 tpy CO	R336.120 5(1)(a) & (b)	Four communal Regenerative Thermal Oxidizers (RTOs)		Wing 3 of FG-TESTCELLS	No

*Presumptively Acceptable Monitoring (PAM)

FG-TESTCELLS consists of 110 engine dynamometer test cells. Exhaust is captured from the engine test cells by the Central Engine Exhaust System (CEES) and transferred to four (4) communal regenerative thermal oxidizers (RTOs) for carbon Monoxide (CO) destruction. Continuous compliance is assured in two ways: (1) by maintaining the average temperature of the RTO above the minimum temperature identified in the most recent stack test, and (2) maintaining the pressure drop of the CEES below -2 inches of water. Maintaining a minimum RTO temperature ensures that the unit meets the required destruction efficiency. A pressure drop in the CEES below -2 inches of water ensures the capture efficiency of the RTO. Each RTO has two thermocouples where temperature is monitored and recorded at least once every 15 minutes. There are 19 pressure transducers within the CEES system that monitor and record the pressure drop at least once every 15 minutes.

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-B4032-2014 are identified in Appendix 6 of the ROP.

PTI Number			
33-04B	309-06A	671-77	62-82A
124-84	252-95	218-04	122-13

Streamlined/Subsumed Requirements

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

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-WELDING	Miscellaneous welding activities throughout the facility	212(4)(e)	285(2)(j)(i)
EU-NGVENTING	Emergency venting of compressed natural gas used for test cell fuel	212(4)(d)	284(2)(g)(iii)
EU-HYDROGENTANK	One 18,000 gallon hydrogen tank and associated piping	212(4)(d)	284(2)(j)

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-NITROGENTANKS	One 960,000 cubic foot and one, 102,000 cubic foot nitrogen tank	212(4)(d)	284(2)(j)
EU-TURBOCHARGER	Test component which heats natural gas and compressed air to simulate dies	212(4)(c)	282(2)(b)(i)
EU-ROLLUPDOOR HEATERS	Natural gas fired rollup door heaters	212(4)(c)	282(2)(b)(i)
EU-CYLINDERS	Miscellaneous butane and propane cylinder usage	212(4)(d)	282(2)(b)(i)
EU-FUELAST	550 gallon fuel tank for mobil equipment	212(4)(d)	284(2)(g)(i)
EU-RACINGGASTANKS	5 small gasoline ASTs for the Racing (4-250 gal tanks and 1-550 gal tank)	212(4)(d)	284(2)(g)(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 the 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 Joyce Zhu, Warren 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
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RENEWABLE OPERATING PERMIT

ROP Number
MI-ROP-B4032-2020

MARCH 11, 2020 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated February 3, 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:	Holly E. Myers, Operations Director 248-857-2206
AQD Contact:	Adam Bognar, Environmental Engineer 586-753-3744 Iranna Konanahalli, Senior Environmental Engineer 586-753-3741

Summary of Pertinent Comments

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

State Registration Number
B4032

RENEWABLE OPERATING PERMIT
OCTOBER 4, 2022 - STAFF REPORT FOR RULE
216(2) MINOR MODIFICATION

ROP Number
MI-ROP-B4032-2020a

Purpose

On April 30, 2020, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B4032-2020 to General Motors LLC - Pontiac Engineering Center pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

General Information

Responsible Official:	Stephen Jenkins, Director of Operations
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202200158
Date Application for Minor Modification was Submitted:	August 17, 2022

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

Description of Changes to the ROP

Minor Modification Number 202200158 was to remove Special Condition IX.1 which stated "The permittee shall not purchase from the adjacent OneH2 Pontiac location greater than 49% of its annual hydrogen production based on a 12-month rolling period. This compliance demonstration will begin 12 months after OneH2 begins hydrogen production." This Condition is no longer applicable and is considered obsolete.

OneH2 is supplying 100 percent of hydrogen production to General Motors LLC - Pontiac Engineering Center and is now considered part of the same Stationary Source as General Motors LLC - Pontiac Engineering Center. OneH2 does not have active air permits associated with their operations. This source will be included in the upcoming ROP Renewal with General Motors LLC - Pontiac Engineering Center.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

Action Taken by EGLE

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-B4032-2020, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by any affected states or the USEPA.