

State Registration Number

K2131

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

MI-ROP-K2131-2021b

Western Michigan University

State Registration Number (SRN): K2131

Located at

1903 West Michigan, Kalamazoo, Kalamazoo County, Michigan 49008

Permit Number: MI-ROP-K2131-2021b

Staff Report Date: March 8, 2021

Amended Dates: June 29, 2022
October 28, 2024

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

State Registration
Number
K2131

RENEWABLE OPERATING PERMIT

ROP Number

MARCH 8, 2021 - STAFF REPORT

MI-ROP-K2131-2021

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: | Western Michigan University 1903 West Michigan Kalamazoo, Michigan 49008 |
| Source Registration Number (SRN): | K2131 |
| North American Industry Classification System (NAICS) Code: | 611310 |
| Number of Stationary Source Sections: | 1 |
| Is Application for a Renewal or Initial Issuance? | Renewal |
| Application Number: | 201900167 |
| Responsible Official: | Jan Van Der Kley, VP Business and Finance 269-387-2365 |
| AQD Contact: | Rachel Benaway, Environmental Quality Analyst 269-370-2170 |
| Date Application Received: | September 27, 2019 |
| Date Application Was Administratively Complete: | September 27, 2019 |
| Is Application Shield in Effect? | Yes |
| Date Public Comment Begins: | March 8, 2021 |
| Deadline for Public Comment: | April 7, 2021 |

Source Description

Western Michigan University (WMU) is a state educational institution located in the city of Kalamazoo. The primary emission units at WMU are one natural gas-fired boiler, two No. 2 fuel oil or natural gas-fired boilers, two natural gas-fired combustion turbines, each with a natural gas-fired heat recovery steam generator (HRSG) and duct burner, and one natural gas-fired peaking generator located at the Robert M. Beam Power Plant. There are various natural gas-fired or diesel/No. 2 fuel oil-fired emergency generators located throughout the WMU campus.

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) | 9.81 |
| Nitrogen Oxides (NO _x) | 47.04 |
| Particulate Matter (PM) | 4.13 |
| Sulfur Dioxide (SO ₂) | 1.59 |
| Volatile Organic Compounds (VOCs) | 3.30 |

This source is a true minor source of HAPs, thus no HAP emissions data is listed.

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 Kalamazoo 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 carbon monoxide (CO) and nitrous oxides (NO_x) exceeds 100 tons per year.

The stationary source is an area source of hazardous air pollutant (HAP) emissions because the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

EUBOILER9 and EUBOILER10 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, Subparts A and Dc. EUPBTURBIN-7 and EUPBTURBIN-8 at the stationary source are subject to the Standards of Performance for Stationary Gas Turbines promulgated in 40 CFR Part 60, Subpart A and GG. The duct burners associated with EUPBHRSGEN-7 and EUPBHRSGEN-8 are subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Dc. EU-42-EMERGEN-02, EU-44-EMERGEN-01, EU-82-EMERGEN-01, and EU-149-EMERGEN-01 are subject to the NSPS for Stationary Compression Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and IIII. EU-001-EMERGEN-01, EU-29-EMERGEN-02, EU-59-EMERGEN-01, EU-138-EMERGEN-01, EU-174-EMERGEN-01, EU-175-EMERGEN-01, EU-ENGINE9, and EU-ENGINE10 are subject to the NSPS for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ.

EU-02-PEAKGEN, EU-42-EMERGEN-02, EU-44-EMERGEN-01, EU-82-EMERGEN-01, EU-149-EMERGEN-01, EU-001-EMERGEN-01, EU-29-EMERGEN-02, EU-59-EMERGEN-01, EU-138-EMERGEN-01, EU-174-EMERGEN-01, EU-175-EMERGEN-01, EU-ENGINE9, and EU-ENGINE10 at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants for existing stationary RICE promulgated in 40 CFR Part 63, Subparts A and ZZZZ (RICE Area Source MACT). The ROP contains special conditions provided by WMU in their application for applicable requirements from 40 CFR Part 63, Subparts A and ZZZZ. The AQD is not delegated 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."

No emission units have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

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-K2131-2015a are identified in Appendix 6 of the ROP.

| PTI Number | | | |
|------------|---------|---------|--------|
| 2-91B | 2-91D | 46-03 | 8-04 |
| 154-05A | 154-05C | 201-08 | 144-09 |
| 17-11A | 132-12 | 163-11A | 22-14 |
| 107-15 | | | |

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-27-BOILER-01 | 0.9 MMBTU/hr gas boiler in McCracken Hall | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-27-GASAST-01 | Gasoline storage tank #1 | Rule 212(4)(d) | Rule 284(2)(g) |
| EU-51-BOILER-01 | Police department gas boiler #1, 0.375 MMBTU/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-51-BOILER-02 | Police department gas boiler #2, 0.375 MMBTU/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-51-BOILER-03 | Police department gas boiler #3, 0.375 MMBTU/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-51-BOILER-04 | Police department gas boiler #4, 0.375 MMBTU/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-51-EMEGEN-01 | DPS diesel emergency generator, 2.2 MMBTU/hr | Rule 212(4)(e) | Rule 285(2)(g) |
| EU-90-BOILER-01 | Wellborn gas boiler, 0.1 MMBTU/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-21-EMEGEN-01 | Physical plant portable diesel emergency generator, 2.2 MMBTU/hr | Rule 212(4)(e) | Rule 285(2)(g) |
| EU-84-EMEGEN-01 | Fetzer natural gas emergency generator, 0.14 MMBTU/hr | Rule 212(4)(e) | Rule 285(2)(g) |
| EUSPCHEATERS | Various small space heaters located throughout campus | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EU-FOODPREP | Various food prep equipment throughout the Facility, including bake ovens | Rule 212(4)(c) | Rule 282(2)(e) |
| EU-118-GASKIL | Five natural gas-fired kilns for ceramics in S. Kohrman building | Rule 212(4)(c) | Rule 282(2)(a)(iii) |
| EU-21-EMERGEN-02 | Portable diesel generator, 0.34 MMBTU/hr | Rule 212(4)(e) | Rule 285(2)(g) |

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 Rex Lane, Kalamazoo 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

K2131

RENEWABLE OPERATING PERMIT

APRIL 15, 2021 - STAFF REPORT ADDENDUM

ROP Number

MI-ROP-K2131-2021

Purpose

A Staff Report dated March 8, 2021, 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

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| Responsible Official: | Jan Van Der Kley, VP Business and Finance 269-387-2365 |
| AQD Contact: | Rachel Benaway, Environmental Quality Analyst 269-370-2170 |

Summary of Pertinent Comments

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

Changes to the March 8, 2021 Draft ROP

No changes were made to the draft ROP.

State Registration Number

K2131

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-K2131-2021a

**JUNE 29, 2022 - STAFF REPORT FOR RULE 216(2)
MINOR MODIFICATION**

Purpose

On June 7, 2021, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-K2131-2021 to Western Michigan University 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

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| Responsible Official: | Jan Van Der Kley, VP Business & Finance 269-387-2365 |
| AQD Contact: | Caryn Owens, Senior Environmental Engineer 231-878-6688 |
| Application Number: | 202200122 |
| Date Application for Minor Modification was Submitted: | June 7, 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).

PTI No. 39-22 was a minor modification under PSD, and not required to go through the public participation process.

Description of Changes to the ROP

Minor Modification is to incorporate the terms and conditions of PTI No. 39-22 into the ROP. PTI No. 39-22 was issued for the replacement of the existing engine core of Turbine 8 (EUPBTURBIN-8) with the current version of the same model engine offered by the equipment manufacturer, due to an engine failure at Turbine 8 when a component within the compressor section of the turbine fractured and caused damage throughout the turbine engine, rendering the unit inoperable. The engine core will be about the same capacity of the existing engine core, and emissions will be lower due to improved efficiency.

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-K2131-2021, 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.

State Registration Number
K2131

RENEWABLE OPERATING PERMIT
OCTOBER 28, 2024 - STAFF REPORT FOR RULE
216(2) MINOR MODIFICATION

ROP Number
MI-ROP-K2131-2021b

Purpose

On August 22, 2022, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-K2131-2021a to Western Michigan University 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

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|--|--|
| Responsible Official: | Jan Van Der Kley, Vice President, Business & Finance 269-387-2365 |
| AQD Contact: | Caryn Owens, Senior Environmental Engineer 231-878-6688 |
| Application Number: | 202400119 |
| Date Application for Minor Modification was Submitted: | July 24, 2024 |

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 202400119 is to incorporate PTI No. 68-24, which is to replace the existing engine core of turbine 7 with the current model engine offered by the equipment manufacturer. WMU elected to replace the engine core with the version of the same model of engine 7. The core engine is about the same capacity as the former engine core however the emissions are lower due to the better efficiency.

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-K2131-2021a, 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.