

State Registration Number
N4975

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N4975-2021

Michigan Power Limited Partnership

State Registration Number (SRN): N4975

Located at

5795 West Sixth Street, Ludington, Mason County, Michigan 49431

Permit Number: MI-ROP-N4975-2021

Staff Report Date: August 9, 2021

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

AUGUST 9, 2021 - STAFF REPORT	3
SEPTEMBER 13, 2021 - STAFF REPORT ADDENDUM	8

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AUGUST 9, 2021 - STAFF REPORT

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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:	Michigan Power Limited Partnership 5795 Sixth Street Ludington, Michigan 49431
Source Registration Number (SRN):	N4975
North American Industry Classification System (NAICS) Code:	221112
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201800079
Responsible Official:	Cory Anderson, Plant Manager 231-843-7573
AQD Contact:	Caryn E, Owens, Environmental Engineer 231-878-6688
Date Application Received:	June 6, 2018
Date Application Was Administratively Complete:	June 6, 2018
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	August 9, 2021
Deadline for Public Comment:	September 8, 2021

Source Description

Michigan Power Limited Partnership is a cogeneration utility plant that produces electricity and steam constructed in October 1994. It is located within the city of Ludington. More specifically, the facility is located in the southern portion of an industrial area in the city of Ludington. With the city's residential area located approximately 1/4 mile west of the facility. The Pere Marquette River approximately 1/4 mile south of the site, a city park adjoining west of the site, and industrial facilities adjoining to the north (across West Sixth Street), south and east of the site. The main part of the facility consists of a General Electric (GE) Model PG7111EA natural gas fired turbine rated at 84 Megawatts, and the maximum fuel input rate is 11,136,500 standard cubic feet per hour (or 1136.5 MMBTU per hour) and equipped with a heat recovery system generator (HRSG). The HRSG produces both high and low-pressure steam, and the steam is used to drive a steam turbine generator. Steam extracted from the steam turbine is supplied by contract to OxyChem. The power generated from the turbine is used to supply the required voltage to Consumers Energy power grid. Air pollution control equipment on the turbine and HRSG includes a low NOx burner and a Carbon Monoxide Oxidation System.

Also, there are two auxiliary natural gas fired boilers for steam generation at a maximum input fuel rate of 265,000 standard cubic feet per hour at the facility. These boilers are equipped with low NOx burners and a flue gas recirculation system. Other sources of emissions at the facility are an emergency diesel fired generator and diesel fired emergency fire pump. The emissions from these are uncontrolled.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2020**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	23
Lead (Pb)	0
Nitrogen Oxides (NO _x)	132
Particulate Matter (PM)	19
Sulfur Dioxide (SO ₂)	1
Volatile Organic Compounds (VOCs)	1

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2017 by Michigan Power Limited Partnership:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
N-Hexane	0.01
Formaldehyde	3.37
Benzene	0
Total Hazardous Air Pollutants (HAPs)	4.67

**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 Mason 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 nitrogen oxides and carbon monoxide exceed 100 tons per year.

The stationary source is a minor source of 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.

All emission units 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 nitrogen oxides and carbon monoxide were greater than 100 tons per year.

EUHRSG at the stationary source is subject to the Standards of Performance for Electric Utility Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Da because the HRSG is an electric utility steam generator unit capable of combusting more than 250 MMBTU per hour and was constructed after August 18, 1978.

EUTURBINE at the stationary source is subject to the Standards of Performance for Stationary Gas Turbines promulgated in 40 CFR Part 60, Subparts A and GG because the turbine is a stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBTU per hour that was constructed after October 3, 1977.

FGBOILERS at the stationary source is subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Db because boilers A and B are steam generating units capable of combusting more than 100 MMBTU per hour that were constructed after June 19, 1984.

EUFIREPUMP and EUGENERATOR 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 ZZZZ (RICE Area Source MACT).

EUBOILERA and EUBOILERB (FGBOILERS) are excluded from 40 CFR Part 63, Subparts A and JJJJJJ of the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters – Area Sources promulgated in 40 CFR Part 63, Subparts A and JJJJJJ because under 40 CFR 63.11195(e) they are gas-fired boilers at an Area Source of Hazardous Air Pollutants.

FGTURBINE/HRSG at the stationary source is subject to the federal Acid Rain program promulgated in 40 CFR Part 72.

FGTURBINE/HRSG at the stationary source is subject to the Cross-State Air Pollution Rule NO_x Annual Trading Program pursuant to 40 CFR Part 97, Subpart AAAAA.

FGTURBINE/HRSG at the stationary source is subject to the Cross-State Air Pollution Rule NO_x Ozone Season Group 3 Trading Program pursuant to 40 CFR Part 97, Subpart GGGGG.

FGTURBINE/HRSG at the stationary source is subject to the Cross-State Air Pollution Rule SO₂ Group 1 Trading Program pursuant to 40 CFR Part 97, Subpart CCCCC.

There have been no violation notices or enforcement issues since the last ROP issuance.

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."

EUBOILERA, EUBOILERB (FGBOILERS), EUFIREPUMP, and EUGENERATOR 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 unit(s) does/do not have potential pre-control emissions over the major source thresholds.

The emission limitations of 10.7 ppmvd at 15% oxygen based on a 3-hour rolling average, and 150.3 tons per year based on 12-month rolling time period for Carbon Monoxide from FGTURBINES/HRSG at the stationary source are exempt from the federal CAM regulation pursuant to 40 CFR 64.2(b)(1)(vi), because the emission limits are monitored on a continuous basis, meeting the CAM exemption for a continuous compliance determination method. Carbon Monoxide is directly measured in parts per million (ppm) from the continuous emissions monitoring system (CEMS), and the tons per year emission rate for Carbon Monoxide is calculated using the ppm emissions from the CEMS for each unit, and the gas flow rate, thus meeting the continuous compliance determination method.

FGTURBINE/HRSG contains a Heat Recovery Steam Generator (HRSG) equipped with a Carbon Monoxide Catalytic Oxidation System to control Carbon Monoxide emissions. The Carbon Monoxide Catalytic Oxidation System is not considered a control device for VOC emissions from the HRSG.

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-N4975-2014 are identified in Appendix 6 of the ROP.

PTI Number			
686-93D	686-93C	686-93	

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
FGBOILERS	SC I.1	R 336.1205 (1)(a) & (b), 40 CFR 52.21(j) 0.06 lbs./MMBTU heat input	40 CFR 60.44b(a)(1)(ii) 0.20 lbs./MMBTU heat input.	The 0.06 lbs./MMBTU limit in the streamlined requirement is a lower emission limit, in the same units, than the subsumed NSPS limit and is therefore more stringent.

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.

Draft ROP Terms/Conditions Not Agreed to by Applicant

The 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 Shane Nixon, Cadillac/Gaylord 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.

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**SEPTEMBER 13, 2021 - STAFF REPORT
ADDENDUM**

ROP Number

MI-ROP-N4975-2021

Purpose

A Staff Report dated August 9, 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

Responsible Official:	Cory Anderson, Plant Manager 231-843-7573
AQD Contact:	Caryn E, Owens, Environmental Engineer 231-878-6688

Summary of Pertinent Comments

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

Changes to the August 9, 2021 Draft ROP

No changes were made to the draft ROP.