



State Registration Number
N6521

Michigan Department of Environmental Quality
Air Quality Division
**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N6521-2009

Zeeland Generating Station

SRN: N6521

Located at

425 Fairview Road, Zeeland, Ottawa, Michigan 49464

Permit Number: MI-ROP-N6521-2009

Staff Report Date: October 12, 2009

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) requires that the Michigan Department of Environmental Quality (MDEQ), 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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October 12, 2009 STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to 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 report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit 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:	Zeeland Generating Station 425 Fairview Road Zeeland, Michigan 49464
Source Registration Number (SRN):	N6521
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:	200800083
Responsible Official:	Brian Roth, Facility Manager 616-772-6641
AQD Contact:	April Lazzaro, Senior Environmental Quality Analyst 616-356-0248
Date Permit Application Received:	June 12, 2008
Date Application Was Administratively Complete:	June 24, 2008
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	October 12, 2009
Deadline for Public Comment:	November 11, 2009

Source Description

The Zeeland Generating Station power plant is located in Zeeland, Ottawa County, Michigan. The facility is located on the northeastern outskirts of Zeeland, Michigan. The surrounding land is predominantly industrial and agricultural. The plant is a natural gas-fired electrical generation facility consisting of two combustion turbines operating in simple cycle mode; and two additional combustor turbines, two duct burners and a steam generator collectively operating in combined cycle mode. Total output for the facility is about 800 megawatts. Support equipment for the facility includes two gas-fired auxiliary boilers and a gas-fired emergency generator.

Each of the four General Electric 7FA combustion turbines is equipped with dry low-NOx combustor system. Nitrogen oxide emissions from the turbines operating in combined cycle are controlled by Selective Catalytic Reduction (SCR) devices, using aqueous ammonia as the reactant. Emissions from each turbine are monitored by Continuous Emissions Monitoring Systems (CEMS) for carbon monoxide and nitrogen oxides.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the **2008** submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	206.15
Lead (Pb)	0
Nitrogen Oxides (NO _x)	110.78
Particulate Matter (PM)	13.59
Sulfur Dioxide (SO ₂)	0.56
Volatile Organic Compounds (VOCs)	3.48
Ammonia	9.79
Individual Hazardous Air Pollutants (HAPs) **	
Formaldehyde	0.01
Total Hazardous Air Pollutants (HAPs)	

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

See Parts C and D in the draft 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 located in Ottawa County, which is currently designated by the U.S. 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 nitrogen oxides, carbon monoxide, PM-10 and volatile organic compounds exceeds 100 tons per year.

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The stationary source is not considered to be a major source of Hazardous Air Pollutant (HAP) emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is less than 10 tons per year and the potential to emit of all HAPs combined is less than 25 tons per year.

The stationary source is subject to the New Source Performance Standards for the gas turbines and duct burners promulgated in 40 CFR Part 60, Subparts A, Da and GG. Certain requirements (monitoring for nitrogen content of natural gas, NO_x monitoring method, NO_x emission limit, sulfur content of gas, sulfur dioxide initial performance testing) were streamlined, based on other, more stringent applicable requirements (i.e., BACT, CEMS, use of pipeline quality natural gas). Streamlined requirements are identified in Tables FGSIMPLECYCLE and FGCOMBINEDCYCLE of the Renewable Operating Permit. All required NSPS initial performance testing has been completed. Testing requirements in the Renewable Operating Permit pertain to ongoing and future testing.

The stationary source was subject to review under the Prevention of Significant Deterioration regulations of 40 CFR Part 52.21 because at the time of New Source Review permitting the potential to emit of carbon monoxide, nitrogen oxides, PM-10 and volatile organic compounds was greater than 250 tons per year. In addition to PSD-required best available control technology (BACT), VOC emissions were evaluated relative to Rule 702. Emissions of individual toxic air contaminants (formaldehyde, ammonia) were evaluated relative to Michigan's Air Toxic regulations per Rules 224 and 225.

The stationary source has several emission units (each turbine) subject to the federal Acid Rain program promulgated in 40 CFR Part 72. The facility's Acid Rain Permit, based on the permittee's application, is attached to the Renewable Operating Permit as Appendix 9.

Each turbine at the stationary source is subject to the Clean Air Interstate Rule Annual NO_x Budget Trading program pursuant to 40 CFR 97.101 through 97.188, as adopted and modified by Rules 802a, 803, 821, and 830 through 834.

Each turbine at the stationary source is subject to the Clean Air Interstate Rule Ozone NO_x Budget Trading program pursuant to 40 CFR 97.301 through 97.388 as adopted by Rules 802a, 803 and 821 through 826.

Each turbine at the stationary source is subject to the Clean Air Interstate Rule Annual SO₂ Budget Trading program pursuant to 40 CFR 97.201 through 97.288, as adopted and modified by Rule 420.

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

The emission limitations or standards for nitrogen oxides from FGCOMBINEDCYCLE (the only controlled emissions) at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR Part 64, because 60 CFR 64.2(b)(1)(iii) meets the CAM exemption for Acid Rain monitoring requirements. Therefore, FGCOMBINEDCYCLE is exempt from CAM requirements for nitrogen oxides.

Changes to the permit include correcting Underlying Applicable Requirements that were incorrect citations.

All required NSPS initial performance testing has been completed. Testing requirements in the Draft ROP pertain to ongoing and future testing. All references to Performance Specification testing in the Draft permit have been deleted.

Startup, shutdown and malfunction emission requirements have been clarified.

FGCOMBINEDCYCLE was clarified with regard to PM emission limits and testing requirements under 40 CFR 60.42Da which only regulates PM filterable, not PM-10 as previously written.

Pipeline quality natural gas has been defined for the purposes of this permit.

The Sulfur Dioxide limit on FGCOMBINEDCYCLE has been corrected and made more restrictive pursuant to 40 CFR 60.42Da.

The facility's cold cleaner is not subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for halogenated solvent cleaning operations, 40 CFR 63, Subpart T. The unit is regulated by Rule 707.

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-N6521-2004 are identified in Appendix 6 of the ROP.

PTI Number			
267-98A			

Equivalent Requirements

This permit does not include any equivalent requirements pursuant to Rule 212(5). Equivalent requirements are enforceable applicable requirements that are equivalent to the applicable requirements contained in the original PTI, a Consent Order/Judgment, and/or the State Implementation Plan.

Non-applicable Requirements

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

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Exemption	PTI Permit Exemption
EUAUXBOILER	Two 9.2 mmBtu/hr natural gas-fired package auxiliary boilers	R 336.1212(4)(b)	R 336.1282(b)(i)
EUFIREPUMP	2.1 mmBtu/hr diesel fired fire pump engine	R 336.1212(4)(d)	R 336.1285(g)
EUGENERATOR	2.6 mmBtu/hr natural gas fired emergency generator	R 336.1212(4)(d)	R 336.1285(g)
EUPARTSWASHER	Leased cold cleaner	R 336.1212 (4)(a)	R 336.1281 (h)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This permit 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 DEQ

The AQD proposes to approve this permit. 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 U.S. Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit 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 Heidi G. Hollenbach, Grand Rapids District Supervisor. The final determination for ROP approval/disapproval 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 terms and conditions, and resolution of any objections by the USEPA.



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**November 13, 2009 STAFF REPORT
ADDENDUM**

Purpose

A Staff Report dated October 12, 2009, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). 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 R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Brian Roth, Facility Manager 616-772-6641
AQD Contact:	April Lazzaro, Senior Environmental Quality Analyst 616-356-0248

Summary of Pertinent Comments

Zeeland Generating Station commented on Appendix 8 because the Code of Federal Regulation citations had changed slightly and the corresponding numbering sequence had also changed. The facility also requested to remove FGCOMBINEDCYCLE, Condition III.7, which limits the simultaneous operation of the combined cycle turbines.

Changes to the Working Draft ROP

Updates to Appendix 8 pursuant to comments from the facility were made where necessary. The facility was informed that any change to FGCOMBINEDCYCLE, Special Condition III.7, a PSD requirement, must be conducted through New Source Review and no change to the ROP was made.