

State Registration Number
B4252

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B4252-2023

AEP Cook Nuclear Plant

State Registration Number (SRN): B4252

Located at

One Cook Place, Bridgman, Berrien County, Michigan 49106

Permit Number: MI-ROP-B4252-2023

Staff Report Date: February 27, 2023

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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FEBRUARY 27, 2023 - STAFF REPORT

ROP Number

MI-ROP-B4252-2023

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:	AEP Cook Nuclear Plant One Cook Place Bridgman, Michigan 49106
Source Registration Number (SRN):	B4252
North American Industry Classification System (NAICS) Code:	221113 - Nuclear Electric Power Generation
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202200102
Responsible Official:	Joel Gebbie, SVP - Chief Nuclear Officer 269-465-5901 x 2499
AQD Contact – District Inspector:	Matt Deskins, Senior Environmental Quality Analyst 269-303-8326
AQD Contact - ROP Writer:	Matt Karl, Senior Environmental Quality Analyst 517-282-2126
Date Application Received:	May 4, 2022
Date Application Was Administratively Complete:	May 4, 2022
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	February 27, 2023
Deadline for Public Comment:	March 29, 2023

Source Description

AEP (American Electric Power) Cook Nuclear Plant is a two-unit nuclear power plant located in Bridgman, Berrien County, Michigan, on the shore of Lake Michigan. The facility is bordered with Lake Michigan to the west and I-94 to the east. Grand Mere State Park is a mile to the north and the nearest city is Bridgman which is approximately 2 miles to the south. Nuclear reactor #1 went online in 1975 and reactor #2 in 1978. Reactor #1 can produce 1,048 megawatts (MW) and reactor #2 1,107 MW. In addition to the two nuclear steam supply system fed electric turbine generators, the facility also has several fuel oil-fired emergency generators and fire pumps, a small #2 distillate oil fired auxiliary boiler that is used primarily for building heating when both units are out of service, one propane fired emergency generator, and a paint shop that supports the maintenance of the overall facility. These sources are distributed throughout the facility and in an emergency, would be run continuously until such time as external power could be restored to the facility for safety and security reasons. In 2021, under a permit to install exemption rule the facility installed two diesel engine emergency generator sets to ignite hydrogen flares in the case of an emergency.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2021**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	2.4
Lead (Pb)	0.5×10^{-5}
Nitrogen Oxides (NO _x)	9.2
PM10*	0.5
Sulfur Dioxide (SO ₂)	0.6×10^{-1}
Volatile Organic Compounds (VOCs)	0.4

*PM10 = particulate matter with an aerodynamic diameter of 10 micrometers or less.

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 Berrien 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 (NO_x) exceeds 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.

No emission units at the stationary source were subject to the Prevention of Significant Deterioration (PSD) regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality or 40 CFR 52.21 because the process equipment was either constructed/installed prior to June 19, 1978, the promulgation date of the PSD regulations or the potential to emit any regulated pollutant was not greater than 250 tons per year.

Emission units installed after June 19, 1978 were not subject to PSD regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality or 40 CFR 52.21 because the equipment did not result in a significant increase in emissions of a regulated pollutant.

EU-BOILER1 at the stationary source is subject to the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Dc.

EU-DRYCASKDSLGEN, EU-U1DISGENERATOR and EU-U2DISGENERATOR at the stationary source are subject to the Standards of Performance for Stationary Compression Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and IIII.

FG-EMERDIESELS, FG-ENGINES, EU-SECDIESELGEN, EU-DSLFIREFPUMP1, EU-DSLFIREFPUMP2, EU-TRGCTRDSLGEN, EU-MAINGATEDSLGEN, EU-COMTWRPRGEN, EU-DRYCASKDSLGEN, EU-U1DISGENERATOR and EU-U2DISGENERATOR at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ. The engines FG-EMERDIESELS, FG-ENGINES, EU-SECDIESELGEN, EU-DSLFIREFPUMP1, EU-DSLFIREFPUMP2, EU-TRGCTRDSLGEN, EU-MAINGATEDSLGEN, and EU-COMTWRPRGEN are considered "existing" stationary RICE because they were installed prior to June 12, 2006. The engines EU-DRYCASKDSLGEN, EU-U1DISGENERATOR and EU-U2DISGENERATOR are considered "new" stationary RICE because they were installed after June 6, 2006 and are subject to regulation under 40 CFR Part 60, Subpart IIII as noted above.

The emergency diesel engine generator sets EU-1ABEDG, EU-1CDEDG, EU-2ABEDG, and EU-2CDEDG which are subject to 40 CFR Part 63, Subpart ZZZZ may be called on to operate beyond 100 hours per year as allowed in 40 CFR 63.6640(f)(2). Due to the nature of the operations of this facility (nuclear power plant) the emergency engines may operate close to or exceeding 100 hours per year due to the enhanced requirements of the plant Technical Specifications and/or by the Nuclear Regulatory Commission (NRC) requirements. This is allowed as long as the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year.

EU-BOILER1 at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, or Institutional Boilers promulgated in 40 CFR Part 63, Subparts A and JJJJJJ.

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."

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 do not have a control device.

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-B4252-2018 are identified in Appendix 6 of the ROP.

PTI Number			
460-93A	260-03B	34-05	

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-BOILER1	SC I.1	R 336.1401 (0.31 lb/MMBTU)	40 CFR 60.42c(d) (0.50 lb/MMBTU)	The boiler is subject to 40 CFR Part 60, Subpart Dc, which includes an emission limit for SO ₂ of 0.50 lb/MMBTU for this category of boiler. However, when the facility permitted this boiler, they accepted a limit of 0.31 lb/MMBTU which is, of course, a stricter 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

There were no processes listed in the ROP Application as exempt devices under Rule 212(4). Exempt devices 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 following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant's objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
FG-EMERDIESELS	Process/Operational Restriction Special Condition (SC) III.1	AQD returned condition III.1 to the language established in PTI No. 460-93A FG-EMERDIESELS SC III.1. from the improperly revised language in MI-ROP-B4252-2018.

The applicant does not agree that SC III.1 notes that the emergency generators can operate in excess of 100 hours per year for non-emergency purposes, specifically for “readiness testing.”

However, PTI No. 460-93A, FG-EMERDIESELS, SC III.1 allows operation for the non-emergency purposes of maintenance and operator training, which covers “readiness testing.” Additionally, FG-MACTZZZZ>500 contains the RICE MACT (40 CFR Part 63, Subpart ZZZZ) conditions that apply to the emergency generators in FG-EMERDIESELS. FG-MACTZZZZ>500, SC III.5 covers “readiness testing” beyond 100 hours per year.

SC III.1 was improperly revised during the drafting of MI-ROP-B4252-2018 to add language specifying that the emergency generators can operate for “readiness testing under the plant Technical Specifications and/or by Nuclear Regulatory Commission (NRC) requirements.” This renewal removes this additional language and returns the condition to the original language of PTI No. 460-93A. To change the language, the source should apply to the AQD Permits Section and request the change through the new source review (NSR) process. The AQD will keep the language as established in PTI No. 460-93A and will not return the condition to the incorrect version contained in MI-ROP-B4252-2018 during this ROP renewal.

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, Field Operations Manager. 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
MARCH 30, 2023 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-B4252-2023

Purpose

A Staff Report dated February 27, 2023, 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:	Quinton S. Lies, Site Vice President 269-465-5901 x2492
AQD Contact – District Inspector:	Matt Deskins, Senior Environmental Quality Analyst 269-303-8326
AQD Contact - ROP Writer:	Matt Karl, Senior Environmental Quality Analyst 517-282-2126

Summary of Pertinent Comments

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

However, comments were received by USEPA regarding a lack of recordkeeping for material contents to demonstrate compliance on the AQD Cold Cleaner template in another ROP.

Changes to the February 27, 2023 Draft ROP

Due to the comment received by USEPA on the AQD Cold Cleaner template, the following change has been made to the flexible group conditions for FG-COLDLEANERS:

In Section VI Monitoring/Recordkeeping, added the following special condition as the third condition:

“The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component, used in each cold cleaner. The data may consist of Safety Data Sheets, manufacturer’s formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1213(3))**”