

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
B2840

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B2840-2014c

**CONSUMERS ENERGY COMPANY
Consumers Energy - Karn Facility**

SRN: B2840

Located at

2742 and 2680 North Weadock Highway, Essexville, Bay County, Michigan 48732

Permit Number: MI-ROP-B2840-2014c

Staff Report Date: August 11, 2014

Amended Dates: March 7, 2016,
May 22, 2018,
September 6, 2018

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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RENEWABLE OPERATING PERMIT

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MI-ROP-B2840-2014

AUGUST 11, 2014 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:	Consumers Energy Company Consumers Energy - Karn Weadock Facility 2742 North Weadock Highway Essexville, Michigan 48732
Source Registration Number (SRN):	B2840
North American Industry Classification System (NAICS) Code:	221112
Number of Stationary Source Sections:	5
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201400022
Responsible Official:	David T. Walter, Site Production Manager I 989-891-3158
AQD Contact:	Sharon LeBlanc, Environmental Quality Analyst 989-894-6212
Date Permit Application Received:	January 29, 2014
Date Application Was Administratively Complete:	January 29, 2014
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	August 11, 2014
Deadline for Public Comment:	September 10, 2014

Source Description

The Consumers Energy Company, Consumers Energy – Karn Weadock Facility (B2840), located at 2742, 2680 and 2555 North Weadock Highway, Essexville, Michigan, is engaged in the generation and transmission of electricity for sale.

Karn Plant - Unit 1 and 2:

Karn boiler #1 (EU-KARN1) is a 2,500 million BTU per hour, dry bottom tangential coal fired boiler with fuel oil startup capabilities and supplemental co-firing for flame stabilization and mill outages. Particulate emissions are currently controlled by pulse jet fabric filters which replaced two electrostatic precipitators (in series). Notification of installation was submitted to the District on May 25, 2011. To comply with the NO_x Budget Trading Program/CAIR Program, Selective Catalytic Reduction (SCR) and/or the accumulation of adequate NO_x allowances will be utilized. A spray dry absorber (SDA) and sorbent injection are scheduled to be installed for sulfur dioxide (SO₂), mercury and acid gas, and air toxics control.

Karn boiler #2 (EU-KARN2) is a 2,540 million BTU per hour, dry bottom wall coal fired boiler with fuel oil startup capabilities and supplemental co-firing for flame stabilization and mill outages. Low NO_x burners were installed in 1998. Particulate emissions are currently controlled by pulse jet fabric filters which replaced two electrostatic precipitators (in series). Notification of the installation was submitted to the District office on September 10, 2010. To comply with the NO_x Budget Trading Program/CAIR Program, Selective Catalytic Reduction (SCR) and/or the accumulation of adequate NO_x allowances will be utilized. A spray dry absorber (SDA) and sorbent injection are scheduled to be installed for sulfur dioxide (SO₂), mercury and acid gas, and air toxics control.

Karn boiler #1 and boiler #2 ash handling system includes ash ponds and equipment (i.e. a particle separator, primary and secondary holding silos, truck load out and dust collectors). Additionally, a dry ash handling system will serve the primary and secondary baghouses, air preheater hoppers and the economizer hoppers on Karn Units 1 and 2. Control equipment includes two bag filter/separators and the two vacuum producers from the baghouses, air heater and economizer, and one bin vent filter on the transfer tank, for each Unit. The transfer tanks have backup wet unloading systems. During normal operations all dry fly ash goes to an ash storage silo (EU-ASHSILO-1) common to EU-ASHKARN1&2 and EU-ASHWEADOCK7&8 with dry and wet unloading capabilities.

Karn Unit 1 and 2 are also supported by Karn 1 and 2 DC emergency diesel generators (EU-KARN12DCGEN) and Karn 1 and 2 AC emergency diesel generator (EU-KARN12ACGEN). The maximum design capacity of each generator is less than 500 horsepower.

Also associated with the Karn Plant are the following EUs:

KARN Plant Emission Unit	Description
EU-GUARDHSGEN1	12 horsepower, propane-fired, emergency generator for guard house
EU-GUARDHSGEN2	40 horsepower, propane-fired, emergency generator for guard house
EU-FISHBARGEN1	10.7 horsepower, propane-fired, emergency generator for energized fish barrier.
EU-PARTSCLEANERS12	Cold parts cleaner

As indicated earlier in the text, Karn Units 1 and 2 are adding SDA pollution controls. Emission units associated with the SDAs include:

Karn Plant SDA Emission Unit	Description
EU-LIMEPREP	Lime prep operations consisting of lime storage silos, lime detention slakers, lime slurry transfer and product tanks
EU-BPRECYCLE	Byproduct (ash, spent lime and sorbent) recycle system. Consists of byproduct storage bins, vacuum transport blowers and slurry mix tanks.
EU-BPDISPOSAL	Byproduct disposal system consisting of disposal storage silos and vacuum transport to silos.
EU-SORBENT	Two sorbent storage silos.

Karn Plant- Units 3 and 4:

Karn boiler #3 (EU-KARN3) is a 7,290 million BTU per hour natural gas and fuel oil-fired boiler (i.e. dual fuel). Sulfur dioxide (SO₂) emissions from the boiler are controlled via fuel blending. Nitrogen oxide (NO_x) emissions from Karn boiler #3 are controlled via low NO_x burner technology.

Karn boiler #4 (EU-KARN4) is 8,030 million BTU per hour natural gas and fuel oil-fired boiler (i.e. dual fuel). Sulfur dioxide (SO₂) emissions from Karn boiler #4 are also controlled via fuel blending. Nitrogen oxide (NO_x) emissions are controlled via low NO_x burner technology.

Auxiliary boiler A and Auxiliary boiler B (EU-AUXBLRA and EU-AUXBLRB) are natural gas fired with each having a maximum rated capacity of 300 million BTU per hour. NO_x emissions from auxiliary boilers A and B are controlled via low NO_x burner technology.

Karn 3 and 4 are supplied by fuel oil storage tanks A, B, E and F (EU-FOTANKA, EU-FOTANKB, EU-SUBTANKE and EU-SUBTANKF). The referenced tanks are all equipped with an internal floating roof and polyurethane vapor seal. All four tanks have a capacity of less than 225,000 barrels of oil. Two 5.23 million BTU per hour, natural gas-fired tank farm boilers (EU-TANKFARMBLR1 and EU-TANKFARMBLR2) for heating fuel transmission lines are also components of the Karn 3 and 4 Plant.

Additionally, Karn 3 and 4 are backed up with an emergency diesel generator (EU-KARN34GEN). The maximum design capacity of the generator is less than 500 brake horsepower. There is also a paint room located at the Karn 3 and 4 Plant (EU-PAINTROOM34).

Weadock Plant Units 7 and 8:

Weadock boiler #7 (EU-WEADOCK7) is a 1,610 million BTU per hour dry bottom tangential coal fired boiler with fuel oil startup capabilities and supplemental co-firing for flame stabilization and mill outages. Low NO_x burners were installed in 2010. Particulate emissions are currently controlled by an electrostatic precipitator (ESP). A sulfur trioxide injection system can be used to enhance the collection efficiency of the ESP.

Weadock boiler #8 (EU-WEADOCK8) is also a 1,610 million BTU per hour dry bottom tangential coal fired boiler with fuel oil startup capabilities and supplemental co-firing for flame stabilization and mill outages. Low NO_x burners were installed in 2010. Particulate emissions are currently controlled by an electrostatic precipitator (ESP). A sulfur trioxide injection system can be used to enhance the collection efficiency of the ESP.

A dry ash handling system serves the ESPs and economizer hoppers on Weadock Units 7 and 8. Control equipment includes one bag filter/separator on the vacuum producer from the ESP and economizer and one bin vent filter on the transfer tank, for each unit. The transfer tanks have backup wet unloading systems. During normal operations, all dry fly ash goes to an ash silo common to EU-ASHKARN1&2 and EU-ASHWEADOCK7&8 with dry and wet unloading capabilities.

It should be noted that Weadock boilers 7 & 8 are scheduled for closure by April 2016.

Coal Handling:

Consumers Energy operates a coal handling system on the bank of the Saginaw River. Coal is received by either freighter or rail. Coal received by rail is unloaded in the dumper building and stockpiled via radial stacker equipment. Dust control agents are immediately applied as necessary as coal is unloaded in the dumper building. Coal received via freighter is unloaded by the ship crew with continuous application of dust suppressant. Additional dust control measures include rolling and compacting coal piles along with an extensive water sprinkling system. Other emission sources at the coal handling operation include a cold parts cleaner.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the 2013 submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	645
Lead (Pb)	0.05
Nitrogen Oxides (NO _x)	3,548
Particulate Matter – PM10, Filterable	215
Particulate Matter – PM 10, Primary	6
Particulate Matter – PM 2.5, Filterable	88
Particulate Matter – PM 2.5, Primary	5
Sulfur Dioxide (SO ₂)	15,490
Volatile Organic Compounds (VOCs)	3
Individual Hazardous Air Pollutants (HAPs) **	
Hydrochloric Acid	75
Hydrogen Fluoride	60
Total Hazardous Air Pollutants (HAPs)	>135

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

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases in tons per year of CO₂e is 4,242,537.2 short tons (2012 GHG data). CO₂e is a calculation of the combined global warming potentials of six Greenhouse Gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

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 Bay 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 sulfur dioxide, nitrogen oxides and carbon monoxide exceeds 100 tons per year.
- The potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, (specifically Hydrochloric Acid (HCL) and Hydrogen Fluoride) is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is more than 25 tons per year.
- The potential to emit of Greenhouse Gases is 100,000 tons per year or more calculated as carbon dioxide equivalents (CO₂e) and 100 tons per year or more on a mass basis.

At the time of the 2009 ROP renewal, no emission units at the stationary source were believed to be subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451 or 40 CFR, Part 52.21 because the process equipment was constructed/installed prior to June 19, 1978, the promulgation date of the PSD regulations or during New Source Permit Review it was determined that permitted emission levels were below significance levels. More recently it was determined that Weadock boilers EU-WEADOCK7 and EU-WEADOCK8 are subject based on installation of Low NO_x Burners on the units which while reducing NO_x Emissions is believed to have resulted in a significant increase in CO emissions.

In addition to Weadock 7&8 boilers referenced above, the following units reference PSD regulations under their respective permit conditions:

- EU-ASHKARN1&2,
- EU-ASHSILO-1/EUASHSILO-3, and
- EU-ASHWEADOCK7&8

which are associated with the dry ash handling system installed in 2006 for the Karn 1&2 and Weadock 7&8 boiler systems;

- EU-LIMEPREP,
- EU-BPDISPOSAL,
- EU-BPRECYCLE, and
- EU-SORBENT

which are associated with the Karn 1&2 boiler SDA pollution control system (projected to be installed in 2014).

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR, Part 98 is not an ROP applicable requirement and is not included in the ROP.

Fuel oil storage tanks EU-SUBTANKE and EU-SUBTANKF at the stationary source are subject to the Standards of Performance for Petroleum Storage Vessels promulgated in 40 CFR, Part 60, Subparts A and K. However, based on their construction dates, they are not subject to Subpart Ka or Kb.

The stationary source has multiple Emission Units subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) promulgated in 40 CFR, Part 63 which are summarized in the table below. The stationary source's cold cleaners (EU) are currently not subject to the NESHAP for halogenated solvent cleaning operations, 40 CFR, Part 63, Subpart T.

EMISSION UNIT	NESHAP Standard	Promulgated in 40 CFR, Part 63
EU-KARN1	Electric Generating Units (EGUs)	Subparts A and UUUUU
EU-KARN2	Electric Generating Units (EGUs)	Subparts A and UUUUU
EU-KARN3	Electric Generating Units (EGUs)	Subparts A and UUUUU
EU-KARN4	Electric Generating Units (EGUs)	Subparts A and UUUUU
EU-AUXBLRA	Industrial Boilers (IB)	Subparts A and DDDDD.
EU-AUXBLRB	Industrial Boilers (IB)	Subparts A and DDDDD.
EU-WEADHTBLR	Industrial Boilers (IB)	Subparts A and DDDDD.
EU-TANKFARMBLR1	Industrial Boilers (IB)	Subparts A and DDDDD.
EU-TANKFARMBLR2	Industrial Boilers (IB)	Subparts A and DDDDD.
EU-COMBTURB*	Combustion Turbines	Subparts A and YYYY
FG-K12EMERGENCYDG	RICE	Subparts A and ZZZZ
FG-W78EMERGENCYDG	RICE	Subparts A and ZZZZ

*Note EU-COMBTURB is subject to the subpart but does not have any applicable requirements. The turbine would have requirements if it were modified.

EU-KARN1, EU-KARN2, EU-AUXBLRA, EU-AUXBLRB, EU-KARN3, EU-KARN4, EU-WEADOCK7 AND EU-WEADOCK8 at the stationary source are subject to:

- Federal Acid Rain program promulgated in 40 CFR, Part 72.
- Clean Air Interstate Rule NO_x annual trading program pursuant to Rules 802a, 803, 821, and 830 through 834.
- Clean Air Interstate Rule NO_x ozone season trading program pursuant to Rules 802a, 803 and 821 through 826, and
- Clean Air Interstate Rule SO₂ annual trading program pursuant to Rule 420.

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."

The following devices at the stationary source are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64. The emission units have a control device and potential pre-control emissions for the listed pollutants at greater than major source threshold levels.

Device	Control Description	Pre Control Emissions > Major Source Threshold	Monitoring Device
EU-KARN1 Coal Fired Boiler	Pulse Jet Fabric Filter	PM	COMs and Broken Bag Detection System
EU-KARN2 Coal Fired Boiler	Pulse Jet Fabric Filter	PM	COMs and Broken Bag Detection System
EU-WEADOCK7 Coal Fired Boilers with Low NO _x burner and Shared Stack	Electrostatic Precipitators with sulfur trioxide injection system to enhance efficiency.	PM	COMS

Device	Control Description	Pre Control Emissions > Major Source Threshold	Monitoring Device
EU-WEADOCK8 Coal Fired Boilers with Low NO _x burner and Shared Stack	Electrostatic Precipitators with sulfur trioxide injection system to enhance efficiency.	PM	COMS
FG-ASHMAP-1 Ash Handling system associated with Karn 1 & 2	Fabric Filter Dust Collectors: 6 filter/separators and 5 bin vent filters	PM	Visible Emissions and Broken Bag Detection System
EU-ASHKARN1& Dry Ash Handling system associated with Karn 1 & 2	5 Ash Handling Dust Collectors	PM	Visible Emissions
FG-ASHMAP-3 Ash Handling system associated with Weadock 7&8	Fabric Filter Dust Collectors: 6 filter/separators and 5 bin vent filters	PM	Visible Emissions and Broken Bag Detection System
EU-ASHWEADOCK7&8 Dry Ash Handling System associated with Weadock 7 & 8	5 Ash Handling Dust Collectors	PM	Visible Emissions and Broken Bag Detection System
EU-COALHAND Coal Handling Activities for Karn 1&2 and Weadock 7&8	9 Dust Collectors, 8 of which have pre-control emissions <100 tons.	PM	Visible Emissions, differential pressure gauge and Broken Bag Detection System

The following EUs at the stationary source are exempt from federal Compliance Assurance Monitoring (CAM) for the specified reasons.

Device	Pre Control Emission > Major Source Threshold	Exempt From CAM	Exemption
EU-KARN1	NO _x and SO _x	Yes	40 CFR, Part 64, meet(s) the CAM exemption for Acid Rain and CAIR monitoring requirements
EU-KARN2	NO _x and SO _x	Yes	40 CFR, Part 64, meet(s) the CAM exemption for Acid Rain and CAIR monitoring requirements

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-B2849-2009a are identified in Appendix 6 of the ROP.

PTI Number			
102-06	1144-91	843-84	333-73*
158-01	145-91	41-83	62-72
354-99	766-90B	154-82	152-71
362-97	935-87	221-81	151-71
424-94A	482-86	300-76	150-71A
1465-91	689-85A	455-74	390-08
1211-91	157-85	344-73A	

*Designates PTIs in which permitted equipment has been removed from site.

Streamlined/Subsumed Requirements

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

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	Rule 212(4) Exemption	Rule 201 Exemption
EU-GUARDHSGEN1	Guard house emergency generator #1- propane fired RICE generator	NA	285(g)
EU-GUARDHSGEN2	Guard house emergency generator #2- propane fired RICE generator	NA	285(g)
EU-FISHBARGEN	Fish barrier emergency generator- propane-fired RICE generator	NA	285(g)

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 Chris Hare, 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.

Purpose

A Staff Report dated August 11, 2014, 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:	David T. Walter, Site Production Manager I 989-891-3158
AQD Contact:	Sharon LeBlanc, Environmental Quality Analyst 989-894-6212

Summary of Pertinent Comments

On September 10, 2014, Air Quality Division (AQD) Staff received comments from U.S. Environmental Protection Agency (U.S. EPA), Region 5 Staff regarding the draft ROP and Staff Report. The comments (*in italics*) are presented below, and are followed by the AQD Response.

- 1) *Renewable Operating Permit (ROP), Staff Report, Page 7: Weadock 7&8 boilers – The staff report language states “more recently, it was determined that Weadock boilers EU-WEADOCK 7 and EU-WEADOCK8 are subject to Prevention of Significant Deterioration (PSD) based on installation of Low NOx burners on the units which while reducing NOx emissions is believed to have resulted in a significant increase in CO emissions.” Please add to the permit record some background information and explanation of this determination. Also, please add any appropriate consent decree or PSD requirements to the permit as necessary.*

On October 17, 2008, EPA issued a Notice of Violation (NOV) alleging that Consumers Energy (the company) had violated federal environmental regulations with reference to permitting requirements and installation of emissions- control equipment at the Karn/Weadock and other company facilities. Specifically, that the company failed to obtain a PSD permit for major modifications to some boilers associated with the facility. The violations were reported to stem from routine maintenance, repair and replacement activities associated with electric generating facilities across the nation, which were reviewed as part of the EPA’s Coal-Fired Power Plant Enforcement Initiative that began in 1999. A settlement in this matter in the form of a Consent Decree (CD) was reached between Consumers Energy and the Federal Government (EPA and U.S. Department of Justice) and lodged with a Federal Court on September 16, 2014. The CD will not be final and enforceable until the completion of a 30-day public comment period and entry by the federal court. A copy of the CD was not available for review at the time of this addendum. Appropriate components of the CD will be incorporated into the ROP in a timely manner.

A Permit to Install Application for Installation of Low NOx Burners for the Weadock 7 and 8-Karn/Weadock Complex (PTI 390-08) was submitted by the company on December 8, 2008. At the

time of the submittal, the Facility was in the process of renewing MI-ROP-B2840-2004. MI-ROP-B2840-2009 was issued on 8/18/2009. The Staff Report associated with MI-ROP-B2840-2009 did not identify any emission units subject to PSD as a final determination to the NOV had not been made.

The PTI 390-08 application included “actual-to-projected-actual applicability test” for criteria pollutant to determine if the proposed project qualified as major modification as defined in the PSD regulations. The proposed changes were determined to be subject to PSD based on projected changes in CO emissions. The resulting permit included conditions requiring a CO Continuous Emission Monitoring System (CEMS) for both of the Weadock boilers, CO emission limits, as well as any appropriate testing, monitoring and reporting requirements to the PTI to ensure compliance and meet PSD requirements. These requirements were incorporated into MI-ROP-B2840-2009a.

- 2) *ROP, Staff Report, Page 8: The staff report states “the stationary source has multiple emission units subject to the National Emission Standard for Hazardous air Pollutants (NESHAP) promulgated in 40 CFR Part 63 which are summarized in the table below. The stationary source’s cold cleaners (EU) are currently not subject to the NESHAP for halogenated solvent cleaning operations, 40 CFR, Part 63, Subpart T.” Please clarify whether the cold cleaners referenced here are FG-PARTSCLEANERS12. In addition, provide more explanation of why the cold cleaners are not subject to the NESHAP.*

The stationary source’s cold cleaners that should have been referenced on Page 8 include: FG-PARTSCLEANERS12-S1, FG-PARTSCLEANERS34-S2, FG-PARTSCLEANERS78-S3 and FG-PARTSCLEANERCH-S4. The referenced EUs are not subject to the 40 CFR, Part 63, Subpart T, NESHAP for halogenated solvent cleaning operations because the cleaning solvents utilized at the facility contain no more than five (5) percent of any one or combination of six specified halogenated compounds.

- 3) *ROP, Page 43, EU-SORBENT, 1.EMISSION LIMIT(S) for particulate matter (PM), PM10, PM2.5 Emission limits/Monitoring Testing Method – The permit states that for the emission limits for PM, PM10 and PM2.5 the monitoring is “per Test Protocol.” Please explain how this provides sufficient monitoring for the emissions limits for these pollutants and include additional monitoring as necessary.*

The emission limits referenced are for bin vent filters for two sorbent storage silos. In addition to the three particulate limits referenced are visible emission (VE) limits for the same bin vent filters. At the time of the PTI, AQD staff determined that opacity was an appropriate indicator of compliance. SC VI.2, requires daily VE readings, and specifies that implementation of corrective actions defined in the Malfunction Abatement Plan for the units will occur if ANY VEs are detected. The PTI associated with the units would have included a SC for formal testing at the request of appropriate AQD District Staff, which is reflected in ROP General Condition 13 (GC 13) of the ROP. GC 13 has historically been referenced in place of “per Test Protocol” in the ROP emission limit table. In the referenced situation, EU testing would be requested should violations of Opacity limits warrant the action. Test Protocols would be determined at the time of the request to meet specific pollutant limits and operating scenarios.

- 4) *ROP, Pages 46 & 50, EU-ASHKARN1&2 & ASHSILO-1, respectively, 1. EMISSION LIMITS(S) for PM and PM10 monitoring refer to taking visible emission readings at the bin vent filters. The permit requires that certain work practices be performed if “abnormal” visible emissions are observed. Please define “abnormal” or cite to the regulatory definition.*

Past and recent discussions with Facility Staff have indicated that with reference to bin vent filters onsite, that ANY visible emissions observed are “abnormal” and trigger the appropriate work practices. The referenced permit condition(s) have been modified, with “any” replacing “abnormal”.

5-8) These comments regarding the ROP were typographical in nature and noted what may have been incorrect citations for monitoring and requested verification and correction as necessary.

The identified typographical errors have been corrected and are referenced in the Changes to the August 11, 2014 Draft ROP below.

In addition, Consumers Power Company noted that the quantities of separators/filters and bin vent filters associated with FG-ASHMAP-1 and FG-ASHMAP-3 in the CAM emission unit/monitoring device table were incorrect. The corrected CAM table with the corrections in bold is presented below.

Device	Control Description	Pre Control Emissions > Major Source Threshold	Monitoring Device
EU-KARN1 Coal Fired Boiler	Pulse Jet Fabric Filter	PM	COMs and Broken Bag Detection System
EU-KARN2 Coal Fired Boiler	Pulse Jet Fabric Filter	PM	COMs and Broken Bag Detection System
EU-WEADOCK7 Coal Fired Boilers with Low NO _x burner and Shared Stack	Electrostatic Precipitators with sulfur trioxide injection system to enhance efficiency.	PM	COMS
EU-WEADOCK8 Coal Fired Boilers with Low NO _x burner and Shared Stack	Electrostatic Precipitators with sulfur trioxide injection system to enhance efficiency.	PM	COMS
FG-ASHMAP-1 Ash Handling system associated with Karn 1 & 2	Fabric Filter Dust Collectors: 4 filter/separators and 4 bin vent filters	PM	Visible Emissions and Broken Bag Detection System
EU-ASHKARN1& Dry Ash Handling system associated with Karn 1 & 2	5 Ash Handling Dust Collectors	PM	Visible Emissions
FG-ASHMAP-3 Ash Handling system associated with Weadock 7&8	Fabric Filter Dust Collectors: 4 filter/separators and 4 bin vent filters	PM	Visible Emissions and Broken Bag Detection System

Changes to the August 11, 2014, Draft ROP

In response to comment No. 4, the following SCs in the Draft ROP have had the word “abnormal” replaced by “any”:

- ROP, Page 46, EU-ASHKARN1&2, SC VI.2
- ROP, Page 50, EU-ASHSILO-1, SC VI.1

The following typographical comments identified during the public comment period have been corrected:

- ROP, Page 20, EU-KARN1, EMISSION LIMITS(S). The SO₂ Emission Limits/Monitoring Testing Method citation has been verified and corrected to SC VI.6 and Appendix 3-1, Section 3.3-1.
- ROP, PAGE 25, EU-KARN2, EMISSION LIMIT(S). The SO₂ Emission Limits/Monitoring Testing Method citation has been verified and corrected to SC VI.7 and Appendix 3-1, Section 3.3-1.

- ROP, Page 154, EU-WEADOCK7, EMISSION LIMIT(S). The SO₂ and CO monitoring requirement citations have been verified and corrected to SC VI.7& Appendix 3.3-3 and SC VI.10, respectively.
- ROP, Page 160, EU-WEADOCK8, EMISSION LIMIT(S). The SO₂ and CO monitoring requirement citations have been verified and corrected to SC VI.8 & Appendix 3.3-3 and SC VI.10, respectively.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

RENEWABLE OPERATING PERMIT

ROP Number

B2840

**MARCH 7, 2016 STAFF REPORT FOR RULE
217(2) REOPENING**

MI-ROP-B2840-2014a

Purpose

On November 12, 2014, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B2840-2014 to Consumers Energy - Karn Weadock Facility pursuant to R 336.1214. Once issued, the AQD is required to reopen the ROP if the criteria described in R 336.1217 are met. Only those conditions to be added or changed in the ROP are to be considered during this public comment period. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1217.

General Information

Responsible Official:	Scott Hugo, Site Production Manager 989-891-3268
AQD Contact:	Brian Carley, Environmental Quality Specialist 517-780-7843
Date Public Comment Begins:	March 7, 2016
Deadline for Public Comment:	April 6, 2016

Regulatory Analysis

The AQD has determined that the ROP must be reopened because on January 1, 2015 the Transport Rule (a.k.a. Cross State Air Pollution Rule (CSAPR)) went into effect replacing the Clean Air Interstate Rule (CAIR).

Description of Changes to the ROP

The CAIR Annual SO₂ Permit in Appendices 10-1 and 10-3, CAIR Annual NO_x Budget Permit in Appendices 11-1 and 11-3, and CAIR Ozone NO_x Budget Permit in Appendices 12-1 and 12-3 were removed from the ROP. The requirements of CSAPR were inserted into Appendices 10-1 and 10-3. In Tables EU-KARN1, EU-KARN2, EU-KARN3, and EU-KARN4, Sections IX, the language referencing CAIR was removed and replaced with the requirements to comply with the provisions of the CSAPR NO_x Annual Trading Program, CSAPR NO_x Ozone Trading Program, and the CSAPR SO₂ Group 1 Trading Program and identified in Appendix 10-1. In Tables EU-WEADOCK7 and EU-WEADOCK8, Sections IX, the language referencing CAIR was removed and replaced with the requirements to comply with the provisions of the CSAPR NO_x Annual Trading Program, CSAPR NO_x Ozone Trading Program, and the CSAPR SO₂ Group 1 Trading Program and identified in Appendix 10-3. In Tables EU-AUXBLRA and EU-AUXBLRB, Section IX, the language referencing CAIR was removed and replaced with the requirements of NO_x SIP Call to continue monitoring, recording, and reporting NO_x emissions during the Ozone season (May 1 through September 30).

Action Taken by the Department

The AQD proposes to approve this change to ROP No. MI-ROP-B2840-2014, which was reopened by the AQD in order to incorporate CSAPR. A final decision on the approval of the revised ROP will not be made until the public and any affected states have had an opportunity to comment on the proposed changes to the ROP and the U.S. 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 Chris Hare, Saginaw Bay District Supervisor. The final determination for approval of the revised ROP will be based on a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the public, any affected states or the USEPA.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

RENEWABLE OPERATING PERMIT

ROP Number

B2840

**APRIL 26, 2016 - STAFF REPORT ADDENDUM
FOR RULE 217(2) REOPENING**

MI-ROP-B2840-2014a

Purpose

A Staff Report dated March 7, 2016, was developed in order to set forth the applicable requirements and factual basis for the draft reopening to Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1214(3). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP reopening during the 30-day public and affected state(s) comment period as described in R 336.1214(3) and (4). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	Scott Hugo, Site Production Manager 989-891-3268
AQD Contact:	Brian Carley, Environmental Quality Specialist 517-780-7843

Summary of Pertinent Comments

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

Changes to the March 7, 2016 Draft ROP Reopening

No changes were made to the draft ROP reopening.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

B2840

RENEWABLE OPERATING PERMIT

**JUNE 16, 2016 - STAFF REPORT ADDENDUM
FOR RULE 217(2) REOPENING**

ROP Number

MI-ROP-B2840-2014a

Purpose

A Staff Report dated April 26, 2016, was developed in order to set forth the applicable requirements and factual basis for a proposed reopening to Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1214(3). The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP reopening during the U.S. Environmental Protection Agency's (USEPA), 45-day comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	Scott Hugo, Site Production Manager 989-891-3268
AQD Contact:	Brian Carley, Environmental Quality Specialist 517-780-7843

Summary of Pertinent Comments

No pertinent comments were received during the USEPA's 45-day comment period.

Changes to the April 26, 2016 Proposed ROP Reopening

No changes were made to the proposed ROP reopening.

B2840

**MAY 22, 2018 - STAFF REPORT FOR RULE 216(2)
MINOR MODIFICATION** MI-ROP-B2840-2014b

Purpose

On June 16, 2016, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B2840-2014a to Consumers Energy – Karn Facility pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(2).

General Information

Responsible Official:	Norman Kappala, Site Business Manager 616-738-0000
AQD Contact:	Caryn Owens, Environmental Engineer 231-878-6688
Application Number:	201500062
Date Application For Minor Modification Was Submitted:	May 1, 2015

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to R 336.1216(2).

Description of Changes to the ROP

Application Number 201500062 was to incorporate PTI 40-15 which included the Conditions of the Federal Consent Decree (U.S. V CONSUMERS ENERGY COMPANY, CIVIL ACTION 14-13580, E.D. MICH., 2014). This is to meet Paragraph 235 of the Consent Decree that requires certain parts from the consent decree to be incorporated into a construction permit (PTI). The following must be included in the permit: a schedule for all unit-specific, plant-specific, and system-specific performance, operational, maintenance, and control technology requirements established by this Consent Decree including, but not limited to, any (a) 30-Day, 90-Day and 365-Day Rolling Average Emission Rates, (b) System-Wide Annual NOx and SO2 Tonnage Limitations, (c) the requirements pertaining to the Surrender of NOx and SO2 Allowances, (d) PM Emission Rate and annual stack test requirements, and (e) PM CEMS monitoring requirements. There was no New Source Review (NSR) associated with the PTI application review.

Additionally, the JC Weadock facility and the and the Natural Gas Fired Combustion Turbine are no longer in operation and have been permanently removed from the Stationary Source, therefore AQD removed Section 3 – JC Weadock and Section 4 – Natural Gas Fired Combustion Turbine from the ROP.

During Consumers Energy Company's review of the minor modification, a request was submitted to remove Section 4 from the ROP since the natural gas turbine was removed from the site in June 2016. Consumers Energy Company also requested to remove emission units EU-ASHKARN1&2, EU-ASHSILO-1, and FG-ASHMAP-1, since these emission units and flexible group were replaced with the new handling system covered under EU-BPRECYCLE and EU-DISPOSAL to accommodate adding

air pollution control systems to the existing coal-fired boilers. The ash handling systems associated with EU-ASHKARN1&2, EU-ASHSILO-1, and FG-ASHMAP-1 have been removed from the ROP.

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 at the time of approval of the Minor Modification to the ROP except for requirements listed in Appendix 2 of the ROP. The table in Appendix 2 contains a Schedule of Compliance developed pursuant to R 336.1119(a)(i). The applicant must adhere to this schedule and provide the required certified progress reports at least semiannually or in accordance with the schedule in the table. A Schedule of Compliance for any applicable requirements involved with the change that the source is not in compliance with at the time of permit issuance is supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.

Action Taken by the DEQ

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-B2840-2014b, 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 U.S. 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

B2840

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-B2840-2014b

**JULY 16, 2018 - STAFF REPORT ADDENDUM FOR
RULE 216(2) MINOR MODIFICATION**

Purpose

A Staff Report dated May 22, 2018, was developed in order to set forth the applicable requirements and factual basis for the proposed Minor Modification to the Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1216(2)(c). The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP modification during the U.S. Environmental Protection Agency's (USEPA) 45-day comment period as described in R 336.1216(2)(c). In addition, this addendum describes any changes to the proposed ROP Minor Modification resulting from these pertinent comments.

General Information

Responsible Official:	Norman Kappala, Site Business Manager 616-738-0000
AQD Contact:	Caryn Owens, Environmental Engineer 231-878-6688

Summary of Pertinent Comments

No pertinent comments were received during the USEPA's 45-day comment period.

Changes to the May 22, 2018 Proposed ROP Minor Modification

No changes were made to the proposed ROP Minor Modification.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
B2840

RENEWABLE OPERATING PERMIT
SEPTEMBER 6, 2018 - STAFF REPORT FOR
RULE 216(1)(a)(i)-(iv) ADMINISTRATIVE
AMENDMENT

ROP Number
MI-ROP-B2840-2014c

Purpose

On July 16, 2018, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B2840-2014b to Consumers Energy – Karn Facility pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(1)(a)(i-iv).

General Information

Responsible Official:	Norman Kappala, Site Business Manager 616-738-0000
AQD Contact:	Caryn Owens, Environmental Engineer 231-878-6688
Application Number:	201800106
Date Application for Administrative Amendment was Submitted:	August 15, 2018

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for an Administrative Amendment pursuant to R 336.1216(1)(a)(i).

Description of Changes to the ROP

Application Number 201800106 to incorporate the Coal Handling Operations Section back into the ROP that was inadvertently removed during the previously issued Minor Modification (July 16, 2018). The Section was previously Section 4, but with removal of Section 3 (JC Weadock) and Section 5 (Combustion Turbine) during the previous Minor Modification, the Coal Handling Section was accidentally removed as well. This Administrative Amendment is incorporating the Coal Handling Operations Section back into the ROP as Section 3.

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 Administrative Amendment to the ROP.

Action Taken by the DEQ

The AQD approved an Administrative Amendment to ROP No. MI-ROP-B2840-2014c, as requested by the stationary source. The delegated decision maker for the AQD is the District Supervisor.