

Michigan Department of Environmental Quality  
Air Quality Division

State Registration Number  
K3249

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-K3249-2016a

**Michigan State University**

SRN: K3249

Located at

426 Auditorium Road, East Lansing, Ingham, Michigan 48824

Permit Number: MI-ROP-K3249-2016a

Staff Report Date: May 30, 2016

Amended Date: January 19, 2017

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**  
**STAFF REPORT**

ROP Number

MI-ROP-K3249-2016

**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 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 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:	Sec. #1 - Michigan State University 293 Farm Lane, Room 150 East Lansing, Michigan 48824  Sec. #2 - Michigan State University 354 Service Road. East Lansing, Michigan 48824
Source Registration Number (SRN):	K3249
North American Industry Classification System (NAICS) Code:	611310
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201400078
Responsible Official:	Sec. #1 - Dr. Satish S. Udpa, Executive Vice President, Administrative Services 517-355-5014  Sec. #2 -Robert Ellerhorst, Director of Utilities 517-355-3314
AQD Contact:	Nathan Hude, Environmental Quality Analyst 11 517-284-6779
Date Application Received:	May 14, 2014
Date Application Was Administratively Complete:	May 28, 2014
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	May 30, 2016
Deadline for Public Comment:	June 29, 2016

## Source Description

Michigan State University is a public research university. The primary emission units are three pathological waste incinerators and the T.B. Simon Power Plant which is a co-generating facility. The permit is divided into 2 sections due to the size of the permit and the number of emission units. Section 1 of the permit contains units throughout campus and Section 2 of the permit contains units associated with the campus power plant.

Section 1 of the permit includes the 3 pathological waste incinerators and the many smaller emission units are associated with the MSU campus which includes 2 paint spray booths, 1 ethylene oxide sterilizer, 5 parts washers, 1 bio digester with flare and certified reciprocating engine, 3 engine test cells, 57 reciprocating engines associated with generators throughout the campus, and 63 boilers spread throughout the campus.

Section 2 of the permit includes the entire T.B. Simon Power Plant. Steam is generated for building heat, but can also be used to generate electricity which is only distributed to campus owned buildings. There are 2 boilers (EU-UNIT1 and EU-UNIT2) that have changed from firing coal, bio-fuel, and natural gas, to only firing natural gas, 1 boiler (EU-UNIT3) that only fires natural gas, and 1 boiler (EU-UNIT4) that is permitted to fire a coal and natural gas until January 31, 2017, whereas it will only fire natural gas thereafter. The plant also has 1 gas fired turbine generator (EU-UNIT6) and 1 heat recovery steam generator (EU-UNIT5). Boiler EU-UNIT4 has fabric filters for particulate removal, limestone injection for sulfur dioxide control, and a selective non-catalytic reduction system (SNCR) which will be in use until January 31, 2017. EU-UNIT1, EU-UNIT2, and EU-UNIT3 have low NOx burners for nitrogen oxides control.

EU-UNIT1 through EU-UNIT4 have long since been able to fire coal and natural gas. Permit to install (PTI) 25-11 allowed for the firing of biofuel in addition to coal and natural gas in all four units. With the promulgation of 40CFR63 DDDDD, MSU has decided to comply with the regulation by means of firing natural gas only. This change has required gas delivery infrastructure improvements and an extension of compliance for EU-UNIT4 until January 31, 2017. Due to the PTI's allowing the firing of biofuel, coal, and natural gas, another PTI for just the firing of natural gas was not required thus allowing this ROP renewal to only include information pertaining to the firing of natural gas for EU-UNIT1 through EU-UNIT3, and an allowance to fire coal in EU-UNIT4 until January 31, 2017.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2014**.

### **TOTAL STATIONARY SOURCE EMISSIONS**

<b>Pollutant</b>	<b>Tons per Year</b>
Carbon Monoxide (CO)	291
Lead (Pb)	< 1
Nitrogen Oxides (NO <sub>x</sub> )	464
Particulate Matter (PM)	14
Sulfur Dioxide (SO <sub>2</sub> )	544
Volatile Organic Compounds (VOCs)	14

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2014 by MAERS:

<b>Individual Hazardous Air Pollutants (HAPs) **</b>	<b>Tons per Year</b>
Hydrochloric Acid (HCL)	<b>52</b>
Hydrogen Fluoride (HF)	<b>5</b>
<b>Total Hazardous Air Pollutants (HAPs)</b>	<b>57</b>

\*\*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 (GHG) in tons per year of CO<sub>2</sub>e (carbon dioxide equivalents) is 344,155 short tons. CO<sub>2</sub>e is a calculation of the combined global warming potentials of six GHG (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

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 located in Ingham 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 both nitrogen oxides and sulfur dioxides exceeds 100 tons per year, the potential to emit hydrochloric acid (HCL) is equal to or more than 10 tons per year, and the potential to emit of GHG is 100,000 tons per year or more calculated as CO<sub>2</sub>e and 100 tons per year or more on a mass basis.

EU-UNIT1, EU-UNIT2, EU-UNIT3, EU-UNIT4, and FG-UNITS5/6 at the stationary source were subject to review under the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451 because at the time of New Source Review permitting the potential to emit of both nitrogen oxides and sulfur dioxides was greater than 250 tons per year.

The source has applicable requirements for GHG as a result of review under the Prevention of Significant Deterioration regulations. These Best Available Control Technology (BACT) requirements for GHG are included in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR Part 98 is not an ROP applicable requirement and is not referenced in the ROP.

EU-FLNRINC01 is not subject to Standards of Performance for Hospital/Medical/Infectious Waste (HMIW) Incinerators promulgated in 40 CFR Part 60, Subpart Ec due to a permit restriction of less than 10% HMIW. In 2016, Michigan will regulate Other Solid Waste Incineration (OSWI) Units in a SIP and the Federal Plan, 40 CFR Part 60, Subpart KKK, thus a permit restriction of equal to or greater than 90% Pathological Waste by weight. The Pathological Waste restriction prevents EU-FLNRINC01 from being subject to Standards of Performance for Emission Guidelines and Compliance Times for OSWI Units That Commenced Construction On or Before December 9, 2004, promulgated in 40 CFR Part 60, Subpart FFFF. EU-1-FLNRINC01 is subject to Part 3 Rule 331 for limitations of PM and the stationary source are subject to the Standards of Performance for General Provisions promulgated in 40 CFR Part 60, Subparts A.

EU-1-DCPAHINC01 at the stationary source is not subject to the Standards of Performance for (HMIW) Incinerators promulgated in 40 CFR Part 60, Subpart Ec due to exemption under 60.50c (b) "A combustor is not subject to this subpart during periods when only pathological waste" and 60.50c (c) "Any co-fired combustor (defined in §60.51c) is not subject to this subpart" through material limits imposed in the permit. EU-1-DCPAHINC01 is subject to Part 3 Rule 331 for limitations of PM and the stationary source are subject to the Standards of Performance for General Provisions promulgated in 40 CFR Part 60, Subparts A. A permit restriction of equal to or greater than 90% Pathological Waste by weight has been added to EU-1-DCPAHINC01. The Pathological Waste restriction prevents EU-1-DCPAHINC01 from being subject to Standards of Performance for Emission Guidelines and Compliance Times for OSWI Units That Commenced Construction On or Before December 9, 2004 promulgated in 40 CFR Part 60, Subpart FFFF.

EU-1-CREMATORY at the stationary source is not subject to the Standards of Performance for HMIW Incinerators promulgated in 40 CFR Part 60, Subpart Ec due to exemption under 60.50c (b) "A combustor is not subject to this subpart during periods when only pathological waste" through material limits imposed in the permit. EU-1-CREMATORY is subject to Part 3 Rule 331 for limitations of PM and the stationary source are subject to the Standards of Performance for General Provisions promulgated in 40 CFR Part 60, Subpart A.

FG-TESTCELLS (EU-TESTCELL1 and EU-TESTCELL2) names were changed in this ROP from EU-1-01097ENGINE due to a PTI modification. FG-TESTCELLS are exempt from the National Emission Standard for Hazardous Air Pollutants for Engine Test Cells/Stand 40 CFR Part 63, Subpart P PPPP because testing is for research and teaching activities only and not for commercial testing per 63.9290(d)(3). FG-TESTCELLS are not subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR 63, Subpart ZZZZ because the test cells are for mobile engines.

EU-TESTSTAND is exempt from the National Emission Standard for Hazardous Air Pollutants for Engine Test Cells/Stand 40 CFR Part 63, Subpart P PPPP because testing is for research and teaching activities only and not for commercial testing per 63.9290(d)(3). EU-TESTSTAND is not subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ because the test stand is for mobile engines.

EU-DIENGINE is subject to the Standards of Performance for New Stationary Sources Standards for Stationary Spark Ignition Internal Combustion Engines 40 CFR Part 60, Subpart JJJJ and the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ. The engine is certified and must have certain maintenance practices performed to maintain certification and avoid stack testing requirements. As long as this unit maintains compliance with 40 CFR Part 60, Subpart JJJJ, the unit is not required to comply with 40 CFR Part 63, Subpart ZZZZ per 63.6590(c).

FG-WSF (EU-CHEM, EU-CONSOL1, and EU-CONSOL2) at the stationary source were subject to toxics review under Rule 225.

EU-ENCLSD-FLARE does not have regulatory restrictions other than meeting the department permit exemption rule of R 336.1282(g).

FG-1-STERILIZERS (EU-ETO) at the stationary source was subject to toxics review under Rule 225. FG-1-STERILIZERS is exempt from the National Emission Standard for Hazardous Air Pollutants for Hospital Ethylene Oxide Sterilizers 40 CFR Part 63, Subpart WWWW because MSU is not a hospital and is not an area source of hazardous air pollutant (HAP) emissions per 63.10382(a). Although there is only one sterilizer, MSU requested to maintain the FG with the intent of installing additional sterilizers in the future.

FG-NSPS-JJJJ (EU-596GEN01) is subject to the Standards of Performance for New Stationary Sources for Stationary Spark Ignition Internal Combustion Engines 40 CFR Part 60, Subpart JJJJ and the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ. As long as this unit maintains compliance with 40 CFR Part 60, Subpart JJJJ, the unit is not required to comply with 40 CFR Part 63, Subpart ZZZZ per 63.6590(c). Although the FG consists of only one engine at this time, MSU requested to maintain the FG with the intent of installing additional engines in the future.

FG-EMERGEN $>$ 500-ZZZZ and FG-EMERGEN $\leq$ 500-ZZZZ at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subparts A and ZZZZ.

FG-BOILERMACT boilers are subject to the National Emission Standard for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters 40 CFR Part 63, Subpart DDDDD and Subpart A. Due to the numerous subject boilers, a list was placed in Appendix 11-1 of the ROP providing individual locations and descriptions.

EU-UNIT3 at the stationary source is subject to the Standards of Performance for Fossil-Fuel-Fired Steam Generators promulgated in 40 CFR Part 60, Subparts A and D.

EU-UNIT4 at the stationary source is subject to the Standards for Commercial-Industrial-Institutional Steam Generating Units promulgated in 40 CFR Part 60, Subparts A and Db.

EU-UNIT5 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-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

EU-UNIT1 and EU-UNIT2 are not subject to the National Emission Standard for Hazardous Air Pollutants for Coal and Oil Fired Electric Utility Steam Generating Units 40 CFR Part 63, Subpart UUUUU because the output capability of each unit is less than 25mW and the electricity is not for sale per definition of EGU in 40 CFR 63.10042.

EU-UNIT3 and EU-UNIT4 are not subject to the National Emission Standard for Hazardous Air Pollutants for Coal and Oil Fired Electric Utility Steam Generating Units 40 CFR Part 63, Subpart UUUUU because the electricity produced is not for sale per definition of Electrical Generating Unit (EGU) in 40 CFR 63.10042.

EU-UNIT6 at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines promulgated in 40 CFR Part 60, Subpart GG, 40 CFR Part 63, Subparts A and YYYY.

EU-UNIT6 at the stationary source is not subject to the National Emission Standard for Hazardous Air Pollutants for Coal and Oil Fired Electric Utility Steam Generating Units 40 CFR Part 63, Subpart UUUUU because the unit is classified as a stationary combustion turbine as per 40 CFR 63.9983(a).

EU-EMGENGINE at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ.

EU-EMGENGINE at the stationary source is not subject to New Stationary Sources for Stationary Spark Ignition Internal Combustion Engines 40 CFR Part 60, Subpart JJJJ because it is a compression ignition engine.

EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4 at the stationary source are subject to the NO<sub>x</sub> SIP Call during the ozone season May 1 through September 30.

EU-UNIT4 at the stationary source are subject to the federal Acid Rain program promulgated in 40 CFR Part 72.

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".

EU-FLNRINC01, EU-DCPAHINC01, and EU-CREMATORY at the stationary source are not subject to the federal Compliance Assurance Monitoring rule (40 CFR Part 64) because they do not have potential pre-control emissions over the major source thresholds.

EU-UNIT4 at the stationary source is subject to the federal Compliance Assurance Monitoring rule under 40 CFR Part 64. This emission unit has a control device and potential pre-control emissions of particulate matter greater than the major source threshold level. The monitoring for the control device is a Continuous Opacity Monitor (COM) installed in the exhaust stack and a pressure drop indicator installed across the baghouse collector. Opacity is used as an indicator of operational compliance and pressure drop is an indicator of control device performance. Due to the change of fuel to strictly natural gas by January 31, 2017, EU-UNIT4 will not be subject to 40 CFR Part 64 after that date.

The emission limitation(s) or standard(s) for NOx from EU-UNIT1 and EU-UNIT2 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR Part 64, because emission limitations meet the CAM exemption for a continuous compliance determination method. Therefore, EU-UNIT1 and EU-UNIT2 are exempt from CAM requirements for NOx.

The emission limitation(s) or standard(s) for NOx from EU-UNIT3 and EU-UNIT4 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR Part 64, because emission limitations meet the CAM exemption for Acid Rain monitoring requirements. Therefore, EU-UNIT3 and EU-UNIT4 are exempt from CAM requirements for NOx.

The emission limitation(s) or standard(s) for NOx from EU-UNIT5 and EU-UNIT6 at the stationary source is exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR Part 64, because emission limitations are addressed by 40 CFR Part 60, Subpart GG. Therefore, EU-UNIT6 is exempt from CAM requirements for NOx.

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-K3249-2009 are identified in Appendix 6-1 and 6-2 of the ROP.

PTI Number			
290-72	290-72A	23-75I	830-77
22-82I	23-82I	36-83I	28-84I
29-84I	748-87	6-88I	21-82IA
24-82IA	380-00	271-03	13-04
226-05	229-05	323-07	27-09



**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.

<b>Emission Unit/Flexible Group ID</b>	<b>Condition Number</b>	<b>Streamlined Limit/ Requirement</b>	<b>Subsumed Limit/ Requirement</b>	<b>Stringency Analysis</b>
EU-UNIT4	1	Opacity 10%, except one 6-minute average per hour of not more than 20%. <b>(40 CFR 52.21(j))</b>	Opacity 20%, except for one 6-minute period per hour of not more than 27%. <b>(40 CFR 60.43b)</b>	Both are 6-minute average
EU-UNIT4	2	Particulate Matter 0.03 lbs/MM BTU heat input. <b>(40 CFR 52.21(j))</b>	Particulate Matter 0.051 lbs/MM BTU heat input. <b>(40 CFR 60.43b)</b>	Both are based on Stack Test Protocol
EU-UNIT4	4	NOx 0.16 lbs/MM BTU heat input when firing solid fuel. <b>(40 CFR 52.21(j))</b>	NOx 0.60 lbs/MM BTU heat input when firing natural gas. <b>(40 CFR 60.44b)</b>	Solid fuel 24-hr rolling average versus Stack Test Protocol
EU-UNIT4	6	NOx 0.076 lbs/MM BTU heat input when firing natural gas. <b>(40 CFR 52.21(j))</b>	NOx 0.10 lbs/MM BTU heat input when firing natural gas. <b>(40 CFR 60.44b)</b>	Natural gas 24-hr rolling average versus Stack Test Protocol
EU-UNIT4	8	SO <sub>2</sub> 0.60 lbs/MM BTU heat input when firing solid fuel. <b>(40 CFR 52.21(j))</b>	SO <sub>2</sub> 0.60 lbs/MM BTU heat input. <b>(40 CFR 60.42b)</b>	Both are 30-day rolling average

**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.

Exempt Emission Unit ID	Description of Exempt Emission Unit	Rule 212(4) Exemption	Rule 201 Exemption
EU0212WH01, EU0442WH01, EU0453WH01, EU052BOI01, EU052BOI02, EU088BOI01, EU128BOI01-EU128BOI03, EU133BOI01-EU133BOI04, EU140BOI01, EU144BOI02, EU154BOI01-EU154BOI03, EU161BOI01, EU171BOI01-EU171BOI04, EU325BOI01, EU325BOI02, EU406BOI01, EU406BOI01, EU440BOI01-EU440BOI14, EU442BOI01-EU442BOI03, EU446BOI01-EU446BOI13, EU446BOI15, EU452BOI04, EU453BOI01-EU453BOI03, EU453BOI05, EU469BOI01-EU469BOI08, EU470BOI01, EU470BOI02, EU471BOI01-EU471BOI03, EU472BOI01-EU472BOI06, EU473BOI01-EU473BOI24, EU476BOI01, EU476BOI02, EUDACPAB1, EUDACPAB2, EUHPVB105, EUHPVBOI06 EUHPVBOI01-EUHPVBOI04, EUNGBURNERS, EUSHRBOI01, EUSPHEATER1- EUSPHEATER5, EUSV130101-EUSV140103, EUSV140401-EUSV140403, EUSV140700-EUSV140703, EUSV141001-EUSV141003, EUSV141301-EUSV141303, EUSV141401-EUSV141403, EUSV141701-EUSV141703, EUSV142001, EUSV142003, EUSV142401-EUSV142403, EUSV142601, EUSV142603, EUSV142901-EUSV142903, EUSV143201-EUSV143203, EUSV143401-EUSV143403, EUSV143901, EUSV143902, EUSV144001-EUSV144003, EUSV144201-EUSV144203, EUSV144701-EUSV144703, EUSV145001-EUSV145003, EUSV151201, EUSV151202, EUSV151301-EUSV151303, EUSV151601-EUSV151603,	Fuel burning equipment used for space heating, water heating less than 50 million Btu/hr.	R336.1212(4)(b)	R336. 282(b)(i)

Exempt Emission Unit ID	Description of Exempt Emission Unit	Rule 212(4) Exemption	Rule 201 Exemption
EUSV151901-EUSV151903, EUSV152401-EUSV152403, EUSV152601-EUSV152603, EUSV152901-EUSV152903, EUSV153201-EUSV153203, EUSV153501-EUSV153503, EUSV153801-EUSV153803, EUSV154001-EUSV154003, EUSV154301-EUSV154303, EUSV154601-EUSV154603, EUSV154801-EUSV154803, EUSV155001-EUSV155003, EUSV156501-EUSV156503, EUSV156801-EUSV156803, EUSV157101-EUSV157103, EUSV157301-EUSV157303, EUSV157501-EUSV157503, EUSV157801-EUSV157803, EUSV161201-EUSV161203, EUSV161301-EUSV161303, EUSV161601-EUSV161603, EUSV161801-EUSV161803, EUSV162201-EUSV162203, EUSV162600-EUSV162603, EUSV162703, EUSV162800-EUSV162803, EUSV163101-EUSV163103, EUSV163401-EUSV163403, EUSV163601-EUSV163603, EUSV163901-EUSV163903, EUSV164101-EUSV164103, EUSV164301-EUSV164303, EUSV164501-EUSV164503, EUWATERHEATER#4- EUWATERHEATER#16			
EU058TNK01, EU058TNK02, EU158TNK01, EU407TNK01, EU430TNK01, EU440TNK01, EU442TNK01, EU442TNK02, EU471TNK01, EU472TNK01, EU473TNK01-EU473TNK07, EUGCMTNK01, EUGCMTNK02	Approximately 20 propane and gasoline storage tanks less 40,000.	R336.1212(4)(c)	R336.1284(b)
EU300KIT01-EU300KIT09, EU303KIT01-EU303KIT07, EU305KIT01-EU305KIT05, EU306KIT01-EU306KIT04, EU313KIT01-EU313KIT04, EU313KIT17, EU313KIT19-EU313KIT21, EU317KIT01-EU317KIT08,	Approximately 194 fuel burning equipment units that are used for preparing food for human consumption.	R336.1212(4)(b)	R336. 282(e)

Exempt Emission Unit ID	Description of Exempt Emission Unit	Rule 212(4) Exemption	Rule 201 Exemption
EU320KIT01-EU320KIT09, EU321KIT01-EU321KIT05, EU322KIT01-EU322KIT15, EU323KIT01-EU323KIT18, EU324KIT01-EU324KIT12, EU326KIT01-EU326KIT15, EU330KIT01-EU330KIT07, EU330KIT10-EU330KIT14, EU331KIT01-EU331KIT16, EU332KIT01-EU332KIT11, EU332KIT15, EU332KIT16, Pizza Oven Convection Oven Convection Oven Steamer Steamer Braising Pan Griddle Bread Oven Bake Oven Fryer Fryer Fryer Wok Station 4-Burner Range 6-Burner Range 4-Burner Range 4-Burner Base Range Charbroiler Charbroiler			
EUnaturalgas	Miscellaneous natural gas consuming devices used for heating that are less than 50 million BTU/hr.	R336.1212(4)(b)	R336. 282(b)(i)

**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 the MDEQ, 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, Lansing 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.

**Purpose**

A Staff Report dated May 30, 2016, 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:	Sec. #1 - Dr. Satish S. Udpa, Executive Vice President, Administrative Services 517-355-5014  Sec. #2 - Robert Ellerhorst, Director of Utilities 517-355-3314
AQD Contact:	Nathan Hude, Environmental Quality Analyst 517-284-6779

**Summary of Pertinent Comments**

Comments were received from EPA Region 5 during the 30 Day Public Comment Period. These comments discussed the following:

1. "The draft permit contains provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR Part 63 Subpart ZZZZ that were vacated by the U.S. Court of Appeals for the District of Columbia Circuit. The vacated paragraphs specified that emergency engines operate for a limited number of hours per year in two situations: (1) emergency demand response when the Reliability Coordinator has declared an Energy Emergency Alert Level 2, and (2) when there is a deviation of voltage or frequency of five percent or greater below standard voltage or frequency [40 CFR § 60.4211(f)(2)(ii)-(iii)]. For additional information, see the enclosed April 15, 2016 EPA memorandum entitled, "Guidance on Vacatur of RICE NESIAP and NSPS Provisions for Emergency Engines." The draft permit currently contains these provisions in the following emission units: FG-NSPS-JJJJ, FG-EMERGEN>500ZZZZ, and FG-EMERGEN<500ZZZZ. Please review the permit and update, as necessary."
2. "EU-FLNRINC01, EU-DCPAHINC01, EU-CREMATORY, FG-4MATVENTS, and EU-MHFUGITIVE. The testing and sampling conditions for these emission units indicate that verification of the emission limits shall be conducted upon request of the AQD. The underlying applicable requirements for these conditions were established in the facility's permit to install. In accordance with 40 CFR §70.6(a)(3) and 70.6(c)(1), please revise these unit and flexible group sections of the permit as necessary to assure that they include monitoring requirements sufficient to assure compliance with the emission limits. In particular, please review the frequency of the

testing for each of these emission units and indicate whether or not an additional condition should be included to adjust the sampling frequency to once every five (5) years.”

### **Changes to the July 7, 2016 Draft ROP**

Changes were made to the ROP based on the comments of EPA in the following manner:

1. References to vacated language within 40CFR60 JJJJ and 40CFR63 ZZZZ were removed from the permit; this included the removal of paragraph III.1. and the editing of paragraph II.1 for FG-EMERGEN>500ZZZZ, the removal of paragraph III.3.c.ii and iii and the removal of paragraph VII.4 for FG-EMERGEN≤500ZZZZ, and the removal of paragraph III.1.b.ii and iii for FG-NSPS-JJJJ.
2. EU-FLRNINC01 and EU-DCPAHINC01 special conditions have been changed to include stack testing to be performed every 5 years within 12 months of ROP issuance to determine compliance with PM limits. Due to the size of the charge weight, EU-CREMATORY will not have stack testing yet a daily visual inspection will be conducted and documented every day of use.
3. As of April 4, 2016, the facility has ceased the burning of coal in EU-UNIT4. This has occurred well before the 40CFR63 DDDDD extension to allow the firing of coal until January 31, 2017. An application for the amendment of PTI 75-14B is being submitted to remove all remaining coal conditions. This amendment will thus remove a majority of FG-4MATVENTS emission units and the requirements of EU-MHFUGITIVE. Thus addressing these units will be completed via PTI revision followed by an ROP modification to incorporate the changes.

Minor changes to the ROP document include the following:

1. EU-FLNRINC01 and EU-DCPAHINC01 have been changed to be consistent with the rest of the ROP and are now known as EU-FLNRINC and EU-DCPAHINC.
2. Upon the request of the facility, the allowance to incinerate “Institutional Waste as defined in 40CFR60.3078” was added to EU-DCPAHINC.
3. Paragraph III of EU-DIENGINE was corrected to include a “2. for the paragraph that discusses if the permittee purchased a non-certified...”.

Changes to this staff report:

1. EU-UNIT3 was removed from this report as being subject to 40 CFR Part 72; this was left in the report in error. EU-UNIT3 is not subject to 40 CFR Part 72 due to the removal of coal firing per PTI 75-14B.

Michigan Department of Environmental Quality  
Air Quality Division

State Registration Number

**RENEWABLE OPERATING PERMIT**

ROP Number

K3249

**January 19, 2017 - STAFF REPORT FOR RULE  
216(2) MINOR MODIFICATION**

MI-ROP-K3249-  
2016a

**Purpose**

On October 21, 2016, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-K3249-2016 to Michigan State University 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:	Section 1 - Dr. Satish S. Udpa, Executive Vice President, Administrative Services 517-355-5014
AQD Contact:	Caryn E. Owens, Environmental Quality Analyst 231876-4414
Application Number:	201600197
Date Application For Minor Modification Was Submitted:	December 7, 2016

**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**

Incorporate PTI 95-12A, which increases the SO<sub>2</sub> emission limit and H<sub>2</sub>S concentrations in Section 1 - EU-ENCLSD\_FLARE because H<sub>2</sub>S concentrations have been trending upward.

**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 the DEQ**

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-K3249-2016, 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.



Michigan Department of Environmental Quality  
Air Quality Division

State Registration Number

**RENEWABLE OPERATING PERMIT**

ROP Number

K3249

**March 7, 2017 - STAFF REPORT ADDENDUM FOR  
RULE 216(2) MINOR MODIFICATION**

MI-ROP-K3249-  
2016a

**Purpose**

A Staff Report dated January 19, 2017, 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:	Section 1 - Dr. Satish S. Udpa, Executive Vice President, Administrative Services 517-355-5014
AQD Contact:	Caryn E. Owens, Environmental Quality Analyst 231-876-4414

**Summary of Pertinent Comments**

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

**Changes to the January 19, 2017 Proposed ROP Minor Modification**

No changes were made to the proposed ROP Minor Modification.