

NEW SOURCE REVIEW PERMIT TO INSTALL

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Common Abbreviations / Acronyms Used in this Permit to Install

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
GACS	Gallon of Applied Coating Solids	H ₂ S	Hydrogen Sulfide
GC	General Condition	HP	Horsepower
HAP	Hazardous Air Pollutant	lb	Pound
HVLP	High Volume Low Pressure *	m	Meter
ID	Identification	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM-10	Particulate Matter less than 10 microns diameter
MSDS	Material Safety Data Sheet	pph	Pound per hour
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	psia	Pounds per square inch absolute
PSD	Prevention of Significant Deterioration	psig	Pounds per square inch gauge
PTE	Permanent Total Enclosure	scf	Standard cubic feet
PTI	Permit to Install	sec	Seconds
RACT	Reasonable Available Control Technology	SO ₂	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
VE	Visible Emissions	yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, altered, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **[R336.1201(1)]**
2. If the installation, reconstruction, relocation, or alteration of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the person to whom this permit was issued, or the designated authorized agent, shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, PO Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or alteration of the equipment allowed by this Permit to Install. **[R336.1201(4)]**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **[R336.1201(6)(b)]**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **[R336.1201(8), Section 5510 of Act 451, PA 1994]**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **[R336.1901]**
7. The owner or operator of a source, process, or process equipment shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant in excess of standards for more than one hour, or of any air contaminant in excess of standards for more than two hours, as required in this rule, to the District Supervisor, Air Quality Division. The notice shall be provided no later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the District Supervisor within ten days, with the information required in this rule. **[R336.1912]**
8. Approval of this permit does not exempt the person to whom this permit was issued from complying with any future applicable requirements which may be promulgated under Part 55 of Act 451, PA 1994 or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of Act 451, PA 1994, and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301]**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this permit to install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2). **[R336.1370]**
13. Except as allowed by Rule 285 (a), (b), and (c), permittee shall not substitute any fuels, coatings, nor raw materials for those described in the application and allowed by this permit, nor make changes to the process or process equipment described in the application, without prior notification to and approval by the Air Quality Division. **[R336.1201(1)]**
14. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EUICE1	first internal combustion engine	SVICE1
EUICE2	second internal combustion engine	SVICE2
EUICE3	third internal combustion engine	SVICE3
EUICE4	fourth internal combustion engine	SVICE4
EUICE5	fifth internal combustion engine	SVICE5
EUICE6	sixth internal combustion engine	SVICE6
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGICES	EUICE1	N/A
	EUICE2	
	EUICE3	
	EUICE4	
	EUICE5	
	EUICE6	

The following conditions apply to: FG-ICES

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Compliance Method	Applicable Requirement
1.1a	CO	FG-ICES	191.4TPY	annual	SC 1.5	40CFR 52.21(c) and (d)
1.1b	NOx	FG-ICES	131.9TPY	annual	SC 1.5	40CFR 52.21(c) and (d)
1.1c	hydrogen chloride (HCl)	FG-ICES	2.6TPY	annual	SC 1.5	R336.1225

Testing

1.2 Within 180 days after commencement of trial operation, verification of either of the following, by testing at owner's expense, in accordance with Department requirements, will be required. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. [40 CFR 60.752(b)(2)(iii)]

- (a) reduction of non-methane organic compounds (NMOC) by 98 weight percent
- (b) reduction of the outlet NMOC concentration to less than 20ppm by volume, dry basis as hexane at 3 percent oxygen

Monitoring

1.3 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the following parameters: **[R336.1201(3), R336.1225, 40 CFR 60.756(b), 40 CFR 52.21(c) and (d)]**

- (a) Electrical output (kw) of each generator driven by each internal combustion engine
- (b) Hours of operation of each generator driven by each internal combustion engine
- (c) Total flow rate of landfill gas to FG-ICES (for HCl compliance)
- (d) combustion temperature

Recordkeeping/Reporting/Notification

1.4 The permittee shall record the combustion temperature and gas flow rates in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and WWW. **[40 CFR 60.756(b)]**

1.5 The permittee shall use the following equations and emission factors to calculate the emissions from FG-ICES. Records of the monitored parameters and calculations shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1201(3), R336.1225, 40 CFR 52.21(c) and (d)]**

Equations for CO and NOx:

$$\text{EU-ICE HP} = (\text{generator output in kw}) / (0.746\text{kw/HP} * 93.9/100)$$

$$\text{\#/Hr} = (\text{EU-ICE HP}) * (\text{\#/454g}) * (\text{X g/HP*Hr}) \text{ where X is a factor from table below}$$

Equation for HCl:

$$\text{\#/Hr HCl} = (5.1\text{\# HCl/MMft}^3) * (\text{ft}^3 \text{ landfill gas burned/Hr})$$

ACRONYM/SYMBOL	DESCRIPTION
HP	horsepower
g	grams
#	pounds
Hr	hour
ft ³	cubic feet
MM	million
kw	kilowatts

POLLUTANT	X
CO	2.9g/HP*Hr
NOx	2.0 g/HP*Hr

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.5a	SVICE1	12	27	R336.1225, 40 CFR 52.21(c) and (d)
1.5b	SVICE2	12	27	R336.1225, 40 CFR 52.21(c) and (d)
1.5c	SVICE3	12	27	R336.1225, 40 CFR 52.21(c) and (d)
1.5d	SVICE4	12	27	R336.1225, 40 CFR 52.21(c) and (d)
1.5e	SVICE5	12	27	R336.1225, 40 CFR 52.21(c) and (d)
1.5f	SVICE6	12	27	R336.1225, 40 CFR 52.21(c) and (d)