



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
STEVEN E. CHESTER, Director

AIR QUALITY DIVISION
CONSTITUTION HALL, PO BOX 30260, LANSING, MI 48909
INTERNET: <http://www.michigan.gov/deg>

**GENERAL PERMIT FOR DIESEL FUEL-FIRED ENGINE GENERATORS
WITH A MAXIMUM NAMEPLATE CAPACITY OF 5 MEGAWATTS**

Revised January 31, 2005

SUMMARY

On January 31, 2005, the Michigan Department of Environmental Quality (Department), Air Quality Division (AQD) issued the attached revised general permit to install for diesel fuel-fired reciprocating engine generators with a maximum nameplate capacity of 5 megawatts (MW). The general permit was issued pursuant to R 336.1201a of the Administrative Rules for Air Pollution Control (Rule 201a) and provides a streamlined permitting alternative for affected facilities that meet the specified applicability criteria.

HISTORY

The Department proposed the general permit to streamline the review of permit applications for engine generators and to allow the affected facilities more operational flexibility. The general permit provides terms and conditions necessary to ensure that the source, process or process equipment will comply with all applicable state and federal requirements. The general permit for engine generators was originally issued on March 8, 2004, after reviewing and considering comments received during a public comment period. The general permit was revised and/or updated as follows:

- June 9, 2004 - clarified the fuel type in the applicability criteria and removed the term "low sulfur" from the diesel fuel limit (Special Condition 1.2). By definition, diesel fuel is Number 2 distillate oil. In order to be classified as distillate oil under the American Society for Testing and Materials (ASTM) Method D 396, the oil must have a sulfur content that is less than or equal to 0.5 weight percent. The applicability criteria was revised to state only diesel fuel can be used in the engine generators with the sulfur content not to exceed 0.05 percent by weight if the permittee sells electricity to a utility power distribution system as required by Title IV of the federal Clean Air Act (Acid Rain Program).
- August 24, 2004 - revised the underlying applicable requirement (UAR) for Special Condition 1.6 and removed incorrect UARs from Special Condition 1.11.

On December 6, 2004 the AQD proposed revisions to the general permit to remove the stack height and setback distance requirements. The exhaust gases from most small generators are discharged directly out the top of the unit, without an actual stack. These units are approximately 12 feet tall, so the exhaust gases are discharged above ground level. The 15 foot stack height requirement required the unit to be retrofitted with some type of manufactured stack extension, and often prevented the general permit from being used as intended, for portable units temporarily used in an emergency situation. The AQD proposed the permit be revised to require a vertical unobstructed discharge of the exhaust, without a minimum height above ground level.

Many commercial establishments propose installation of small generators as stand-by units to support themselves (especially computer systems) in the event of a power outage. Often these types of businesses are located close to other businesses, parking lots or streets with short setback distances. The modeling results used in the original proposed general permit were re-evaluated for all criteria pollutants and toxics. The predicted ambient impacts of all pollutants ranged from 5 to 175 times

below the NAAQS or respective ITSLs/IRSLs. Because the permit includes a limit on the amount of fuel used over a 12-month rolling time period, the annual emissions will be far less than what was actually modeled. Based on the fuel limit, a single generator covered by the general permit could only operate for approximately 1100 hours in a 12-month time period. This is representative of a generator being used in an emergency situation. Modeling indicates that small generators which may be covered by this general permit do not have an impact on the ambient air.

The AQD also proposed minor changes to the Process Information form (EQP5787), the underlying applicable requirements (UARs) in several special conditions and the General Information form (EQP5727).

The Department held a comment period from December 6, 2005 to January 5, 2005 to receive comments on the proposed revisions. The Department received written comments questioning why the emissions of toxic air contaminants (TACs) only included three pollutants and why emissions of fine particulate matter (PM2.5) were not addressed.

The Fact Sheet for the original general permit included discussions for generator emissions and the resulting ambient air impacts. Both discussions listed emissions of all criteria pollutants and three TACs. Although formaldehyde, acetaldehyde and acrolein were the only TACs identified, a total of 24 TACs, all those with emission factors established by the U.S. Environmental Protection Agency (USEPA), were evaluated in the original modeling. The emissions of formaldehyde, acetaldehyde and acrolein were selected for the discussions as representative TACs because the emissions of all other TACs were too small to be considered a risk. The dispersion modeling results show that the Predicted Ambient Impacts (PAIs) of all 24 TACs are acceptable.

PM2.5 is defined as fine particulate matter with a diameter of less than 2.5 microns. The Department has no authority to regulate PM2.5 until the non-attainment designation goes into effect later this year. There is no established emission factor for PM2.5 from diesel fuel-fired generators, the AQD has no rule to address emissions of PM2.5, and there is no available method of testing for emissions of PM2.5. However, the original modeling included emissions of PM10. This is particulate matter with a larger diameter than PM2.5. If we make the assumption that all of the PM10 emissions are PM2.5, modeling results show that the PAI will be 0.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) on an annual basis, and 12.8 $\mu\text{g}/\text{m}^3$ on a 24-hour basis. These impacts will not exceed the new National Ambient Air Quality Standards (NAAQS) for PM2.5 of 15 $\mu\text{g}/\text{m}^3$ on an annual basis, and 65 $\mu\text{g}/\text{m}^3$ on 24-hour basis.

BACKGROUND

Rule 201a allows the Department to issue a general permit to install covering numerous similar stationary sources, processes or process equipment, after public notice and opportunity for public participation. The use of general permits provides a streamlined permitting alternative for processes that meet the following general criteria:

- a) The processes must produce the same or reasonably similar products.
- b) The processes must emit the same or similar air contaminants.
- c) The method for capturing and controlling the air contaminants must be the same or limited to a small number of specific alternatives.
- d) The processes must be subject to the same emission limitations, monitoring requirements, federal standards, or state rules.

A person who owns or operates a stationary source, process or process equipment that qualifies for a general permit to install approved by the Department, may apply for coverage under the terms and conditions of the general permit. Owners/operators who apply to the Department for coverage under the general permit to install must certify that the equipment they will be installing meets the necessary criteria for applicability and that they will comply with the special conditions of the permit. These conditions may include site restrictions, emission limits, material usage limits, process/operational limits, equipment requirements, monitoring, and/or recordkeeping requirements which are necessary

to ensure that the equipment will operate in compliance with all applicable air pollution control rules. A person always has the option of applying for a case-by-case permit to install pursuant to Rule 201 if they are unable to comply with the conditions of the general permit to install.

Engine generators, including portable units, are used primarily for power generation including emergency back-up and peak power shaving. The general permit to install may be used for one or more diesel fuel-fired engine generators, each with a maximum nameplate capacity of 5 MW. Use of the general permit limits the combined diesel fuel use for all generators at a stationary source covered by the general permit to 136,000 gallons per 12-month rolling time period.

This general permit to install is not intended to allow circumvention of the federal Prevention of Significant Deterioration (PSD) regulations as identified in 40 CFR 52.21. Diesel fuel-fired engine generators subject to the PSD regulations as a major modification are not intended to be covered by this general permit to install and must obtain a permit to install pursuant to R 336.1201 of the Administrative Rules for Air Pollution Control (Rule 201). The general permit may not be used for diesel fuel-fired engine generators proposed for installation as part of a larger project. Improperly permitted installation and/or operation may constitute cause for civil and/or criminal enforcement proceedings and fines as provided for under Act 451, and other applicable state and federal statutes. Affected units may also be subject to the Renewable Operating Permit Program. Use of this general permit does not obviate the necessity of complying with these regulations and obtaining any necessary permits.

In addition, a diesel fuel-fired engine generator that is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (NESHAP), 40 CFR Part 63, Subpart ZZZZ, is not eligible to use this general permit to install and must obtain a New Source Review permit to install pursuant to Rule 201. A diesel fuel-fired engine generator subject to this NESHAP is one with a nameplate capacity rating greater than 500 brake horsepower, which is located at a major source that emits or has the potential to emit 10 tons per year of any one HAP or 25 tons per year of all HAPs combined.

APPLICABLE REQUIREMENTS

The following state requirements are considered applicable to all sources, processes, or process equipment and are addressed in the General Conditions of the permit.

<u>Citation</u>	<u>Description</u>
R 336.1201a	State rule that gives the Department authority to issue a general permit to install.
R 336.1201(4)	State rule that gives the Department authority to void a permit.
R 336.1207(1)	State rule that gives the Department authority to deny a permit.
R 336.1219	State rule that requires written notification of change of ownership.
R 336.1301	State rule that sets the standards for density of particulate emissions.
R 336.1370	State rule that requires the proper disposal of collected air contaminants.
R 336.1901	State rule that prohibits the emission of air contaminants, which interfere with the enjoyment of life and property and/or has injurious effects to health or safety.
R 336.1910	State rule that requires a pollution control device be operated properly.
R 336.1912	State rule that requires notice of abnormal conditions or malfunctions, which result in emissions in excess of the standards.
R 336.2001, 2003, 2004	State rules that allow the Department to request performance testing, and specify how the test should be conducted.

The following state and federal requirements are considered to be applicable to diesel fuel-fired engine generators with a maximum nameplate capacity of 5 MW and were considered in the development of the general permit to install. These requirements are addressed in the Special Conditions of the permit.

<u>Citation</u>	<u>Description</u>
R 336.1205	State rule that requires enforceable emission limits.
R 336.1224	State rule that requires Best Available Control Technology for toxics (T-BACT) be applied to sources emitting air toxics, and requires that emissions from the process meet the allowed impact levels. In the case of a diesel fuel-fired generator proposed to be covered by this general permit to install, T-BACT is equivalent to BACT for volatile organic compounds (VOCs) and particulate matter (PM) since all toxic air contaminants (TACs) are emitted as VOCs or PM.
R 336.1225	State rule that prohibits the emissions of a TAC in excess of a rate that results in a maximum ambient impact which is more than a health-based screening level. Based on AQD experience, a diesel fuel-fired engine generator with the exhaust being discharged unobstructed vertically, meets the requirements of this rule. However, in the event that evidence indicates a failure to meet the requirements of Rule 225, the Department maintains the authority to require corrective action pursuant to Rule 901. (TAC emissions are assumed to be in compliance with the applicable screening levels since total VOC and PM emissions are insignificant.)
R 336.1702	State rule that applies to new sources of VOC. This rule requires Best Available Control Technology (BACT) be applied to control VOC emissions from a new source. For a diesel fuel-fired engine generator proposed to be covered by this general permit to install, BACT for VOCs is good combustion practices with no additional control. VOC emissions are insignificant (3.3 tons per year) with the annual fuel use limitation.
40 CFR Part 52.21(c)&(d)	Federal Prevention of Significant Deterioration (PSD) of Air Quality and the National Ambient Air Quality Standards (NAAQS).
40 CFR Part 72 Subpart A	Electric generating units (EGU) which sell electricity to any utility power distribution system and burn fossil fuel are required to obtain and operate in compliance with a Phase II Acid Rain Permit, pursuant to Title IV of the federal Clean Air Act. However, an EGU that has a nameplate capacity of less than 25 MW and burns a low sulfur fuel (annual average sulfur content less than 0.05%) may apply for an exemption from Title IV.

APPLICABILITY CRITERIA

To qualify for the general permit to install, based on the listed applicable requirements, each engine generator must meet the following criteria:

- The general permit to install shall apply to diesel fuel-fired engine generators used for electric generation, industrial or commercial use, each with a maximum nameplate capacity of 5 MW.
- The engine generator(s) shall only burn diesel fuel which, as defined by ASTM D 396, has a sulfur content less than or equal to 0.5 percent by weight. If the permittee sells electricity to a utility power distribution system, the sulfur content of the diesel fuel used in the engine generator(s) shall not exceed 0.05 percent by weight based on an annual average.
- The exhaust gases from the engine generators must be discharged unobstructed vertically upwards to the ambient air.
- The total combined diesel fuel use for all engine generators covered by this general permit shall not exceed 136,000 gallons per 12-month rolling time period.
- The general permit may not be used for diesel fuel-fired engine generators proposed for installation as part of a larger project.
- The general permit may not be used for a diesel fuel-fired engine generator which is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ.

- The facility shall have no outstanding unresolved violations of any of the Michigan Department of Environmental Quality Air Pollution Control rules, orders, or permits; or federal air quality regulations.
- The general permit shall not apply to a source, process or process equipment that is included in an existing permit to install pursuant to Rule 201 and is further referenced in an outstanding consent order or consent judgment.

PERMIT CONDITIONS

The general permit to install must be consistent with the permit content requirements of Rule 205(1)(a). This rule requires that if a permit to install includes limitations which restrict the potential to emit of a stationary source, process, or process equipment to a quantity below that which would constitute a major source, the permit shall contain emission limits that are enforceable as a practical matter.

Attachment A lists the terms and special conditions of the general permit to install. These terms and conditions prescribe the applicable emission limits; material usage limits; process/operational limits; testing, monitoring, recordkeeping and reporting requirements; and venting restrictions which are necessary to ensure that a diesel fuel-fired engine generator subject to a general permit will comply with all state and federal applicable requirements.

EMISSIONS

Emissions from engine generators are a result of the combustion process, the nitrogen and sulfur content of the fuel, and products of incomplete combustion. The primary pollutants, which are emitted through the exhaust include nitrogen oxides (NOx), carbon monoxide (CO), volatile organic carbons (VOCs), sulfur dioxide (SO₂) and particulate matter (PM) including visible (smoke) and non visible emissions. VOC emissions include toxic air contaminants (TACs) consisting mainly of formaldehyde, acetaldehyde, and acrolein.

Fourteen existing permits for diesel fuel-fired generators were reviewed which included data for 24 units of various sizes. The rated output of these units ranged from 900 horsepower (hp) (0.6 MW) to 3200 hp (2.5 MW), with an average capacity of 2364 hp (1.6 MW). A range of emission factors for the criteria pollutants were included in the permits or were calculated from the emission rates provided by the generator manufacturers. The worst case emission rates were used to calculate the emission factors for all criteria pollutants. Although emission factors for diesel fuel-fired generators have been established by the U.S. Environmental Protection Agency (USEPA) for 24 TACs, only formaldehyde, acetaldehyde and acrolein emission were evaluated because the emissions of all other TACs were too small to be considered a risk. The following table shows the emission factors used in this general permit. (Units are pounds pollutant emitted per 1000 gallons fuel used or pounds pollutant emitted per million British thermal units.)

Pollutant	Emission Factor
NOx	515 lb/1000 gal
CO	108.2 lb/1000 gal
SO ₂	7.3 lb/1000 gal
VOCs	48.0 lb/1000 gal
PM	15.5 lb/1000 gal
Formaldehyde	1.18E-03 lb/MMBtu
Acetaldehyde	7.67E-04 lb/MMBtu
Acrolein	9.25E-05 lb/MMBtu

Maximum hourly emissions were calculated by applying the emission factors to a 2364 hp (1.6 MW) generator burning 120 gallons per hour of diesel fuel. Annual emissions were based on a maximum fuel use of 136,000 gallons per year to limit NOx emissions to 35 tons per year. All annual emissions are based on a 12-month rolling time period as determined as the end of each calendar month.

Criteria Pollutants	Maximum Expected Emissions	
	Hourly (pph)	Annual (tpy)
NOx	61.8	35.0
CO	13.0	7.3
SO ₂	0.9	0.5
VOCs	5.8	3.3
PM	1.9	1.1

Toxic Air Contaminants (TACs)	Hourly (pph)	Annual (tpy)
Formaldehyde	0.019	0.011
Acetaldehyde	0.013	0.007
Acrolein	0.002	0.001

AMBIENT AIR IMPACTS

Operation of engine generators under the terms and conditions of the general permit to install will have minimal impact on the ambient air. Dispersion modeling for a 2628 hp (1.8 MW) engine generator burning 124.5 gallons per hour of diesel fuel was evaluated for the impacts. The modeling parameters included a 50 foot stack, 30 foot building and an exhaust flow of 14,495 actual cubic feet per minute. The following tables summarize the impacts of the maximum expected emission rates from the modeled unit. The dispersion modeling results show that the Predicted Ambient Impacts (PAI) will not exceed the applicable National Ambient Air Quality Standards (NAAQS) for the criteria pollutants, nor consume more than 80% of the allowable increments specified in the federal regulations. The PAI for emissions of formaldehyde, acetaldehyde and acrolein are all acceptable. The PAI from engine generators operating under the general permit is expected to be less than the table values because the fuel use will be limited to 136,000 gallons per 12-month rolling time period.

Criteria Pollutants Dispersion Modeling Results

Pollutant	Modeled Emissions (lb/hr)	PSD Class II Increment ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Averaging Time	PAI ($\mu\text{g}/\text{m}^3$)
PM10	5.8	17	50	Annual	0.5
PM10	5.8	30	150	24-hour	12.8
PM2.5*	5.8	Not established	15	Annual	0.5
PM2.5*	5.8	Not established	65	24-hour	12.8
CO	31.7	NA	10,000	8-hour	139.4
CO	31.7	NA	40,000	1-hour	226.7
SO ₂	8.8	20	80	Annual	0.8
SO ₂	8.8	91	365	24-hour	19.4
SO ₂	8.8	512	1300	3-hour	38.6
NOx	61.1	25	100	Annual	5.3

* PM2.5 was reviewed as PM10.

Toxic Air Contaminants Dispersion Modeling Results

Pollutant	Modeled Emissions (lb/hr)	ITSL/IRSL* (µg/m³)	Averaging Time	PAI (µg/m³)
Formaldehyde	0.083	0.08	Annual-IRSL	0.007
Acetaldehyde	0.131	9.0	24 hour	0.289
Acrolein	0.016	0.5	1 hour	0.100
Acrolein	0.016	0.02	Annual	0.001

* Initial Threshold Screening Level and Initial Risk Screening Level as defined in R 336.1109(d) & (e).

APPLICATION FOR A GENERAL PERMIT

If the owner/operator of an engine generator decides to install and operate the process under the terms of this general permit to install, then it is the responsibility of the owner/operator to apply to the Department for coverage under the general permit. Installation of equipment prior to granting of a permit to install, including a general permit to install, is a violation of Rule 201.

Application forms, which include all information necessary to determine qualification for and to ensure compliance with the general permit to install, are attached. The final forms are also available on the Internet or may be obtained by contacting Ms. Karla Lowrie at 517-373-7066. The Air Quality Permit Web Page is located at <http://www.deq.state.mi.us/aps>.

The owner/operator shall submit the completed application forms to the AQD Permit Section. Upon receipt, Permit staff will review the application for completeness. The general permit to install for diesel fuel-fired engine generators with a maximum nameplate capacity of 5 MW will be granted by the Department to qualifying sources, processes or process equipment, within 30 days of receipt of a complete application. The AQD will mail to the facility, a copy of the general permit to install and a letter acknowledging that the facility owner/operator intends to install and operate the diesel fuel-fired engine generators in accordance with the terms and conditions of the general permit. The Department will maintain and make available to the public, upon request, a list of the persons that have been authorized to install and operate a stationary source, process or process equipment pursuant to each general permit to install issued by the Department.

**ATTACHMENT A
GENERAL CONDITIONS**

1. The process or process equipment covered by this general permit to install shall not be reconstructed, relocated, or modified unless a Permit to Install pursuant to Rule 201 authorizing such action is issued by the Department, or an application for coverage under a General Permit to Install pursuant to Rule 201a, is submitted to and approved by the Department. For the purpose of a general permit to install, the permittee is defined as any person who owns or operates a process or process equipment at the source for which coverage under the general permit has been granted.
2. Operation of any process or process 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]**
3. Operation of this equipment shall not interfere with the attainment or maintenance of the air quality standard for any air contaminant. **[R336.1207(1)(b)]**
4. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not 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 Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5).
5. Coverage under this general permit to install does not exempt the permittee from complying with any future regulation, which may be promulgated under Part 55 of 1994 PA 451.
6. Coverage under this general permit to install does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
7. The permittee shall notify any public utility of any excavation, tunneling and discharging of explosives or demolition of buildings which may affect said utility's facilities in accordance with Act 53 of the Public Acts of 1974, being sections 460.701 to 460.718 of the Michigan Compiled laws and comply with each of the requirements of that Act.
8. The restrictions and conditions of this general permit to install shall apply to any person or legal entity which now or shall hereafter own or operate the equipment for which coverage under this general permit to install is issued. A written request to the Department for a change in ownership or operational control of the process or process equipment shall be made pursuant to Rule 219.
9. If the installation of the equipment for which coverage under this general permit to install has been issued, has not commenced within, or has been interrupted for, 18 months, then the general permit to install shall become void unless otherwise authorized by the Department as a condition of the permit. Furthermore, the permittee shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation or construction of the equipment allowed by this general permit to install. **[R336.1201(4)]**

10. Except as provided in subrules (2) and (3) or unless the special conditions of the general permit to install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301(1)]**
 - 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 general permit to install.
11. 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]**
12. 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]**
13. Any required testing protocol shall conform to a format acceptable to the AQD. **[R336.2003(1)]**
14. Any required test results, which must be submitted to the AQD, shall conform to a format acceptable to the AQD. **[R336.2001(4)]**
15. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **[R336.1910]**
16. For a stationary source that becomes a major source, as defined by R336.1211(1)(a), upon receipt of approval for coverage under this general permit to install, an administratively complete application for a renewable operating permit shall be submitted not more than 12 months after the stationary source commences operation as a major source. Commencing operation as a major source occurs upon commencement of trial operation of the new or modified process or process equipment that increased the potential to emit of the stationary source to more than or equal to the applicable major source definition specified in R336.1211(1)(a).
17. For a stationary source that is already a major source with an existing renewable operating permit, the source shall notify the Department of the installation of the process or process equipment covered by this general permit, pursuant to R336.1215(3) or apply for a modification pursuant to R336.1216(2) prior to commencing operation. The notification or application to modify the renewable operating permit shall be made using a form approved by the Department.

**ATTACHMENT A
SPECIAL CONDITIONS**

Flexible Group Identification

Flexible Group ID	Emission Unit(s)Included in Group - Description
FG-ENGINES	One or more diesel fuel-fired reciprocating engine generators, including portable units, each with a maximum nameplate capacity of 5 megawatts (MW), used for power generation including emergency back-up and/or peak power shaving.
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.	

The following conditions apply to: FG-ENGINES

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/Monitoring Method	Applicable Requirement
1.1	NOx	FG-ENGINES	515 lb/1000 gal	Test Method	SC 1.7, SC 1.8, SC 1.11	R336.1205(1)(a)

Material Usage Limits

- 1.2 The permittee shall burn only diesel fuel in FG-ENGINES. **[R336.1224, R336.1225]**
- 1.3 If any electricity produced by FG-ENGINES is sold to a utility power distribution system, the sulfur content of the diesel fuel used in FG-ENGINES shall not exceed 0.05 percent by weight on an annual average. The annual average shall be calculated as specified in 40 CFR 72.7(d)(3). **[40 CFR Part 72.7]**
- 1.4 The combined diesel fuel use for all units included in FG-ENGINES shall not exceed 136,000 gallons per 12-month rolling time period. **[R336.1205(1)(a), R336.1220, R336.1224, R336.1225, R336.1702(a), 40 CFR 52.21(c) & (d)]**

Process/Operational Limits

- 1.5 The permittee shall operate FG-ENGINES in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of startup, shutdown and malfunction. **[R336.1912]**
- 1.6 The total capacity from each unit included in FG-ENGINES shall not exceed 5 MW. **[40 CFR Part 72.7]**

Testing

- 1.7 Verification of the NOx emission limit (515 pounds NOx per 1000 gallon fuel used) from one or more representative units of FG-ENGINES, by testing at owner's expense, in accordance with Department requirements may be required. No less than 60 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 the emission factor includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **[R336.1205(1)(a), R336.2001, R336.2003, R336.2004]**

Monitoring

- 1.8 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the fuel use for FG-ENGINES on a monthly basis. **[R336.1205(1)(a), R336.1220, R336.1224, R336.1225, R336.1702(a), 40 CFR 52.21(c) & (d)]**

Recordkeeping/Reporting/Notification

- 1.9 The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction, any maintenance performed and any testing results for FG-ENGINES. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1912]**
- 1.10 If any electricity produced by FG-ENGINES is sold to a utility power distribution system, the permittee shall keep records of the sulfur content calculated in percent by weight, on an annual average as required by SC 1.3. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[40 CFR Part 72.7]**
- 1.11 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period fuel use records for FG-ENGINES. The records must indicate the total amount of fuel used in FG-ENGINES. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a), R336.1220, R336.1224, R336.1225, R336.1702(a), 40 CFR 52.21(c) & (d)]**

Stack/Vent Restrictions

- 1.12 The exhaust gases from FG-ENGINES shall be discharged unobstructed vertically upwards to the ambient air. **[R336.1225, 40 CFR 52.21(c) & (d)]**

Miscellaneous/Allowed Modification

- 1.13 The permittee shall not replace or modify FG-ENGINES, or any portion of FG-ENGINES, unless all of the following conditions are met: **[R336.1201a(1)]**
- a) The permittee shall update the general permit by submitting a new Process Information form (EQP5787) to the Permit Section and District Supervisor identifying the existing and new equipment a minimum of 10 days before the equipment is replaced or modified.
 - b) The permittee shall continue to meet all general permit to install applicability criteria after the replacement or modification is complete.
 - c) The permittee shall keep records of the date and description of the replacement or modification.



Michigan Department Of Environmental Quality - Air Quality Division

**GENERAL PERMIT TO INSTALL APPLICATION
GENERAL INFORMATION**

FOR DEQ USE ONLY

PERMIT NUMBER

Authorized under 1994 PA 451, as amended. Completion of form is required. Applicant may be subject to civil and/or criminal penalties for providing false information.

Instructions: Use this form to request authority to install and operate a source, process or process equipment under the terms and conditions of a general permit to install pursuant to Rule 201a. Prepare this form, the appropriate Process Information form(s) and the Additional Information form (if needed). Submit all information, including forms, in duplicate. **NOTE:** A general permit does not apply to a source, process, or process equipment that is included in a Permit to Install pursuant to Rule 201 and that is further referenced in an outstanding consent order or consent judgment.

1. FACILITY CODES		
State Registration Number (SRN):	<input type="text"/>	Standard Industrial Classification (SIC) (4-digit) OR North American Industry Classification System (NAICS) - (Preferred) <input type="text"/>
2. APPLICANT NAME <i>(Business license name of the corporation, partnership, individual or government agency that owns the facility)</i>		
3. APPLICANT MAILING ADDRESS <i>(Street Address or P.O. Box Number)</i>		
CITY	STATE	ZIP CODE
4. AUTHORIZED EMPLOYEE	TITLE	PHONE NO. <i>(Include Area Code)</i>
5. CONTACT <i>(If different than Authorized Employee, for questions regarding this application)</i>	PHONE NO. <i>(Include Area Code)</i>	
6. EQUIPMENT OR PROCESS LOCATION <i>(Number and street, if different than mailing address)</i>		
CITY	ZIP CODE	COUNTY
7. THE EQUIPMENT IDENTIFIED IN THE APPLICATION IS <input type="checkbox"/> NEW <input type="checkbox"/> EXISTING - DATE INSTALLED:		
8. IS THERE AN EXISTING PERMIT TO INSTALL FOR ANY EQUIPMENT IDENTIFIED IN THIS APPLICATION? PERMIT TO INSTALL NUMBER(S)		<input type="checkbox"/> YES <input type="checkbox"/> NO
9. IS ANY OF THE EQUIPMENT INCLUDED IN AN OUTSTANDING CONSENT ORDER OR CONSENT JUDGMENT?		<input type="checkbox"/> YES <input type="checkbox"/> NO
10. THE FOLLOWING FORMS ARE ATTACHED AS PART OF THIS PERMIT APPLICATION <i>(check all that apply)</i>		
<input type="checkbox"/> PROCESS INFORMATION (EQP _____) <i>(Complete the appropriate form for the process or equipment to be installed and insert the form number in the space provided.)</i>		
<input type="checkbox"/> ADDITIONAL INFORMATION (EQP5729)		

Applicant Certification: I certify, under penalty of law, that this permit application and any attachments were prepared by me, or under my direction or supervision in accordance with a system to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. In addition, the equipment described in this application meets the necessary criteria for applicability for a General Permit to Install. Furthermore, I certify that I can and will comply with all conditions outlined in the General Permit to Install. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

SIGNATURE OF AUTHORIZED EMPLOYEE <i>(Person identified in item 4)</i>	DATE
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Submit completed application and all attachments to:

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION - PERMIT SECTION
P.O. BOX 30260
LANSING, MI 48909-7760**

DEQ USE ONLY - DO NOT WRITE BELOW	
DATE APPLICATION COMPLETE	
DATE GENERAL PERMIT TO INSTALL GRANTED	SIGNATURE
DATE GENERAL PERMIT TO INSTALL VOIDED	SIGNATURE



Michigan Department Of Environmental Quality - Air Quality Division

**GENERAL PERMIT TO INSTALL APPLICATION
ADDITIONAL INFORMATION**

FOR DEQ USE ONLY

PERMIT NUMBER

Authorized under 1994 PA 451, as amended. Completion of form is required if additional information is needed to make an application complete. Applicant may be subject to civil and/or criminal penalties for providing false information.

Instructions: Use this form to include additional information or attachments. Prepare and submit this form with General Information form (EQP5727).

1. FACILITY CODE

STATE REGISTRATION NUMBER (SRN)

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2. ID (Provide the identification number of the device, emission unit or stack/vent for which additional information is being submitted.)

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3. WHAT TYPE OF ADDITIONAL INFORMATION ARE YOU SUBMITTING WITH THIS APPLICATION? (check all that apply)

ATTACHMENT (if checked, describe and list what is attached. May include drawings, charts, calculations, assumptions, etc.)

TECHNICAL (Specialized information regarding the installation, construction, or use of a process or stack/vent)

GENERAL (Any supplemental information that is not technical information)

4. ADDITIONAL INFORMATION NARRATIVE (A brief description of the information or attachment. May include calculations, design parameters, small diagrams, etc.)

**GENERAL PERMIT TO INSTALL APPLICATION
PROCESS INFORMATION – 5 MW ENGINE GENERATOR**

FOR DEQ USE ONLY

PERMIT NUMBER

Authorized under 1994 PA 451, as amended. Completion of form is required. Applicant may be subject to civil and/or criminal penalties for providing false information.

Instructions: Use this form to request authority to install and operate a diesel fuel-fired engine generator with a maximum nameplate capacity of 5 megawatts (MW), under the terms and conditions of a general permit to install pursuant to Rule 201a. Complete a separate copy of this form for each engine generator to be covered by the general permit. Prepare and submit this form with the General Information form (EQP5727). **For a Modification:** Complete and certify this form and submit to the Permit Section and the District Supervisor. Clearly describe and identify all existing and new or additional equipment in Item No. 2.

1. FACILITY CODE	
STATE REGISTRATION NUMBER (SRN)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
2. DESCRIPTION <i>(Include the manufacturer, model, maximum nameplate capacity in MW and purpose for the engine generator.)</i>	
3. DOES THIS SOURCE HAVE AN EXISTING RENEWABLE OPERATING PERMIT?	
<input type="checkbox"/> YES, RENEWABLE OPERATING PERMIT NUMBER:	
<input type="checkbox"/> NO <input type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> APPLICATION SUBMITTED, APPLICATION NUMBER:	

Instructions for completing Items 4 and 5: The engine generator and associated stack/vent should be linked, by assigning each a unique identification number (ID). The ID may be any combination of up to 10 letters, numbers or keyboard characters with no spaces between characters. If this equipment already has an ID assigned from a previous Permit to Install or Renewable Operating Permit, please use the existing ID. If Items 4 and 5 are left blank, IDs will be assigned by the AQD.

4. EMISSION UNIT ID <i>(Assign an identification number for the engine generator.)</i>	EU
5. STACK/VENT ID <i>(Assign an identification number for the stack/vent.)</i>	SV
6. NUMBER OF ENGINE GENERATORS TO BE COVERED BY THIS GENERAL PERMIT <i>(A separate copy of this form is required for each engine generator. Use of the general permit limits the combined diesel fuel use, for all generators at a stationary source covered by the general permit, to 136,000 gallons per 12-month rolling time period.)</i>	

PROCESS INFORMATION	
7. MAXIMUM NAMEPLATE CAPACITY IN HORSEPOWER (hp) <i>(An engine generator with a nameplate capacity greater than 500 hp that is located at a major source of HAP emissions, is subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines and is ineligible to use this general permit.)</i>	
8. MAXIMUM ANNUAL FUEL USE FOR THIS ENGINE GENERATOR IN GALLONS PER YEAR	
9. MAXIMUM ANNUAL FUEL USE FOR ALL GENERATORS COVERED BY THIS GENERAL PERMIT IN GALLONS PER YEAR <i>(Not to exceed 136,000 gallons per 12-month rolling time period.)</i>	

EXHAUST INFORMATION	
10. IS THE EXHAUST DISCHARGED UNOBSTRUCTED VERTICALLY UPWARD?	<input type="checkbox"/> YES <input type="checkbox"/> NO
11. WHAT IS THE HEIGHT (IN FEET) OF THE EXHAUST DISCHARGE ABOVE GROUND LEVEL?	
12. WHAT IS THE DISTANCE (IN FEET) FROM THE EXHAUST TO (a) THE NEAREST PROPERTY LINE AND (b) ANY RESIDENTIAL OR COMMERCIAL ESTABLISHMENT OR PLACE OF PUBLIC ASSEMBLY?	(a) (b)

Applicant Certification: I certify, under penalty of law, that this permit application and any attachments were prepared by me, or under my direction or supervision in accordance with a system to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. In addition, the equipment described in this application meets the necessary criteria for applicability for a General Permit to Install. Furthermore, I certify that I can and will comply with all conditions outlined in the General Permit to Install. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

SIGNATURE OF AUTHORIZED EMPLOYEE	DATE
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