



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

GENERAL PLAN APPROVAL AND/OR GENERAL OPERATING PERMIT (BAQ-GPA/GP 9)

Diesel or No. 2 Fuel-fired Internal Combustion Engines

1. Statutory Authority and General Description:

In accordance with Section 6.1(f) and (g) of the Air Pollution Control Act, 35 P.S. §4006.1, and 25 *Pa. Code* §§127.611 and 127.631, the Department of Environmental Protection ("Department") hereby issues this general plan approval and/or general operating permit for diesel or No. 2 fuel-fired engine(s) (hereinafter referred to as "Diesel Engine(s) General Permit").

2. Applicability/Source Coverage Limitations:

This Diesel Engine(s) General Permit authorizes construction and/or operation of diesel engine(s) including, but not limited to, electrical power generation, rock crushing operation, portable non-metallic processing plants, and those engine(s) used in other processes, which are not covered by other General Permits. GP-11 and GP-12 shall be used for Non-road engines and engines located at coal or coal refuse mining sites respectively.

This Diesel Engine(s) General Permit has been established in accordance with the provisions described in 25 *Pa. Code* Chapter 127, Subchapter H (relating to general plan approvals and general operating permits). If the diesel or No. 2 oil-fired engine(s) at the facility cannot be regulated by the requirements of this General Permit, a plan approval and/or an operating permit issued in accordance with 25 *Pa. Code* Chapter 127, Subchapters B (relating to plan approval requirements) and/or Subchapter F (relating to operating permit requirements) will be required, or if the facility is a Title V facility, a Title V operating permit issued in accordance with Subchapters F and G (relating to Title V Operating Permits) will be required.

Plan Approval:

This Diesel Engine(s) General Permit authorizes the construction of internal combustion engine(s) that meet the best available technology (BAT) required under 25 *Pa. Code* §§127.1 and 127.12(a)(5). For purposes of this Diesel Engine(s) General Permit, BAT for any diesel-fired engine shall include the installation and operation of available control measures that reduce emissions to the limitations described in Condition 7.

Operating Permit:

Once authorization to use this Diesel Engine(s) General Permit is granted, operation may proceed provided that the permittee notifies the Department in accordance with condition 6.

Any diesel-fired engine(s) located at a "Title V facility" as defined in 25 *Pa. Code* §121.1, shall comply with the requirements of 25 *Pa. Code* §127.514 (relating to general operating permits at Title V facilities).

3. Application for Use:

Any person proposing to operate or construct under this Diesel Engine(s) General Permit shall notify the Department using the Diesel Engine(s) General Permit Application provided by the Department and shall receive prior written approval from the Department as required under 25 *Pa. Code* §127.621 (relating to application for use of general plan approvals and general operating permits). The Department will take action on the application within 30 days of receipt.

4. Compliance:

Any applicant authorized to operate a diesel-fired internal combustion engine(s) under this Diesel Engine(s) General Permit must comply with the terms and conditions of the general permit. The diesel-fired internal combustion engine(s) shall be:

- a. operated in such a manner as not to cause air pollution, as defined in 25 *Pa. Code* §121.1;
- b. operated and maintained in a manner consistent with good operating and maintenance practices; and
- c. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this General Permit.

5. Permit Modification, Suspension, and Revocation:

This Diesel Engine(s) General Permit may be modified, suspended, or revoked if the Department determines that the affected diesel-fired internal combustion engines cannot be regulated under this general permit. Authorization to use this Diesel Engine(s) General Permit shall be suspended or revoked if the permittee fails to comply with the applicable terms and conditions of the Diesel Engine(s) General Permit.

The approval herein granted to operate the Diesel Engine(s) General Permit shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 *Pa. Code* §121.1) without Department approval of the internal combustion engine(s) covered by this General Permit. Upon suspension of the General Permit, the permittee may not continue to operate or use the diesel-fired internal combustion engines. If warranted, the Department will require that the diesel-fired internal combustion engine(s) be permitted under the State Operating Permit and/or Title V Operating Permit requirements in 25 *Pa. Code* Chapter 127, if appropriate.

6. Notice Requirements:

The applications and notifications required by 25 *Pa. Code* §127.621 shall be submitted to the appropriate Regional Office responsible for issuing general permits in the county in which the diesel-fired internal combustion engine is, or will be, located. As required under 25 *Pa. Code* §127.621(b), the application shall be either hand delivered or transmitted by certified mail return receipt requested.

The permittee shall not construct a new source under the Diesel Engine(s) General Permit until and unless the appropriate Regional Office is notified that construction is to be conducted and written authorization to construct is received. The fees described in Condition 13 shall accompany the notification of construction.

This Diesel Engine(s) General Permit may be used by a new source owner or operator to authorize operation provided that the Department receives written notice from the permittee of the completion of construction and the intent to commence operation at least five (5) working days prior to completion of construction.

The permittee shall notify the Department, in writing, within 24 hours of the discovery of any malfunction during a business day or by 5:00 p.m. on the first business day after a weekend or holiday of any malfunction of the diesel-fired internal combustion engine(s) which results in, or may result in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 *Pa. Code*, Subpart C, Article III (relating to air resources).

7. Emissions Limits for Diesel Engines:

- a. Any diesel engine for which construction commenced prior to July 1, 1972: any diesel engine(s) operated under this general permit may not, at any time, result in the emission of:
 - i. Visible emissions in excess of the limitations specified in 25 *Pa. Code* §123.41 (relating to limitations) as follows:
 - A. Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one (1) hour; and
 - B. Equal to or greater than 60% at any time.
 - ii. Particulate matter in excess of 0.04 grain per dry standard cubic foot (dscf), when the effluent gas volume is less than 150,000 dry standard cubic feet per minute as specified in 25 *Pa. Code* §123.13 (c)(1)(i). Compliance with Condition 7.a.i. will be considered demonstration of compliance with the above particulate matter emission requirement of 0.04 grain per dscf.
 - iii. Sulfur oxides in such a manner that the concentration of sulfur oxides, expressed as SO₂, in the effluent gas exceeds 500 parts per million by volume, dry basis. Compliance with sulfur content of the diesel fuel of 0.3% (by weight) or less would ensure compliance with this requirement.
 - iv. Odor emissions in such a manner that the malodors are detectable outside the property of the permittee as specified in 25 *Pa. Code* §123.31.
- b. Any diesel engine for which construction commenced on or after July 1, 1972 and best available technology requirements have not been previously established:
 - i. If the diesel-fired internal combustion engine has an engine rating greater than 100 brake horsepower, the engine shall, at a minimum, comply with a Total Hydrocarbon (THC) emission standard of 1.0 gm/bhp-hr.
 - ii. If the diesel-fired internal combustion engine is equal to or greater than 200 brake horsepower and number of hours of operation of engine are equal to or greater than the hours per year listed in the following table, then the engine shall be installed with NO_x control device with a minimum of 80% NO_x control efficiency.

Facilities Located in the "Severe" Ozone Non-Attainment Area

Engine Rating (BHP) >	Engine Rating (BHP) ≤	Actual Annual Operating Hours ≥
200	500	2,000
500	1,000	700
1,000	-----	500

Facilities Located in "Moderate" (or lower classified) Ozone Non-Attainment Areas

Engine Rating (BHP) >	Engine Rating (BHP) ≤	Actual Annual Operating Hours ≥
200	250	7,000
250	500	4,000
500	750	1,700
750	1,000	1,500
1,000	1,500	1,100
1,500	2,000	750
2,000	-----	500

If NO_x emissions from engine(s) are controlled using control technology that uses ammonia or urea as a reagent, then the company shall limit the exhaust ammonia slip at 10 ppmvd, or less corrected at 15% O₂.

All other diesel engines shall at a minimum comply with the NO_x emission standard of 6.9 gms/hp-hr.

- iii. If the diesel-fired engine is equal to or greater than 100 brake horsepower and number of hours of operation of engine are equal to or greater than the hours per year listed in the following table, then the engine shall be installed with CO Oxidation Catalyst control device with a minimum of 90% control efficiency.

Engine Rating (BHP) >	Engine Rating (BHP) ≤	Actual Annual Operating Hours ≥
100	150	4,800
150	250	2,800
250	500	1,850
500	750	1,200
750	1,000	950
1,000	1,500	700
1,500	2,000	670
2,000	2,500	500
2,500	-----	100

All other diesel engines shall at a minimum comply with CO emission standard of 2.0 gms/bhp-hr.

- iv. The sulfur content in diesel fuel shall not, at any time exceed 0.3 percent (by weight).
- v. The particulate matter emissions from each engine shall not exceed 0.4 gms/bhp-hr.

- vi. Visible emissions from diesel engine(s) stacks shall not exceed the following limitations:
 - A. Equal to or greater than 10% for a period or periods aggregating more than three (3) minutes in any one (1) hour; and
 - B. Equal to or greater than 30% at any time.
- vii. Odor emissions in such a manner that the malodors are detectable outside the property of the permittee as specified in 25 Pa. Code §123.31.

8. Performance Testing:

- a. For a new diesel-fired internal combustion engine installed in accordance with Conditions 2 and 7.b. and which has a rated capacity equal to or less than 500 brake horsepower, vendor guarantees shall be sufficient to fulfill this requirement. However, the Department reserves the right to require an additional verification of emission rates which may include source testing in accordance with applicable provisions of 25 Pa. Code Chapter 139 (relating to sampling and testing) or portable exhaust gas analyzers approved by the Department if the NO_x emissions from the facility including the proposed diesel engines are equal to or greater than:
 - i. 22.5 tons per year if the facility is located in severe ozone non-attainment areas; and
 - ii. 90 tons per year if the facility is located in any other area than those listed above in 8.a.i.
- b. For a new internal combustion engine installed in accordance with Conditions 2 and 7.b. and which has a rated capacity greater than 500 brake horsepower, within 180 days of receiving authority to construct under this general permit, the permittee shall perform stack testing in accordance with 25 Pa. Code Chapter 139.
- c. In addition to the stack testing required by this condition, within 12 months after the initial stack testing, and annually thereafter, the permittee shall perform NO_x emissions tests upon each of the respective engines subjected to the BAT as stated in Condition 7.b. herein using a portable analyzer approved by the Department. The Department may alter the frequency of annual portable analyzer tests based on the results. The Department may also waive all or parts of this requirement if the permittee demonstrates compliance, in lieu of testing, through alternate means satisfactory to the Department.
- d. The Department reserves the right to require stack tests in accordance with EPA reference methods should the data from the portable analyzer warrant such tests. The purpose of this testing is to demonstrate compliance with the emission limitations required for new engines.
- e. The Department may accept the vendor guarantees or recent on-site test data on similar engines, or any other means approved by the Department as a verification of NO_x emission if the NO_x emissions from a diesel engine located in severe non-attainment area for ozone are less than 2.5 tons per year or 10 tons per year if a diesel engine is located in areas other than severe non-attainment for ozone.
- f. If performance stack tests are required for the demonstration of compliance with applicable emissions limits, the owner or operator of the affected facility shall comply with the following requirements:

- i. Within sixty (60) days after achieving the maximum production rate at which the affected facility will be operated, but no later than one hundred eighty (180) days after the initial startup of the source and the owner or operator shall demonstrate compliance with the applicable emission limits.
- ii. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.
- iii. At least thirty (30) days prior to the test, the Department shall be informed of the date and time of the test.
- iv. Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Department.

9. Monitoring, Recordkeeping and Reporting:

- a. The permittee shall maintain accurate records, which, at a minimum, shall include:
 - i. The number of hours per calendar year that each engine or piece of equipment operated using non-resettable hour meter.
 - ii. The amount of fuel used per calendar year in each engine or piece of equipment.
- b. When a new diesel-fired internal combustion engine is installed in accordance with Conditions 2 and 7.b and is required to conduct a performance test, the permittee shall maintain records or report the following:
 - i. Records including a description of testing methods, results, all engine operating data collected during the tests and a copy of the calculations performed to determine compliance with emission standards.
 - ii. Copies of the report that demonstrates that the engines were operating at rated brake horsepower and rated speed conditions during performance testing.
 - iii. Submittal of reports in accordance with the requirements and schedules outlined in this Diesel Engine(s) General Permit.
- c. These records shall be retained for a minimum of five (5) years and shall be made available to the Department upon request. The Department reserves the right to expand the list contained in this condition as it may reasonably prescribe pursuant to the provisions of Section 4 of the Pennsylvania Air Pollution Control Act (35 P. S. §§4004), and as it may deem necessary to determine compliance with any condition contained herein.

10. Small Sources of NO_x requirements:

Each diesel engine rated at greater than 1,000 brake horsepower and located in severe non-attainment area for ozone shall comply with small sources of NO_x requirements as established in 25 Pa. Code §§129.203 through 129.205.

11. Interstate Pollution Transport Reduction Requirements:

Each diesel engine rated equal to or greater than 3,000 brake horsepower that emitted greater or equal to 153 tons of NO_x from May 1 through September 30 in 1995 or from May 1 through September 30 of any year thereafter shall comply with the applicable requirements as established in 25 Pa. Code §§145.11 through 145.115.

12. Term of Authorization to Use Diesel Engine(s) General Permit:

Authority to operate under this Diesel Engine(s) General Permit is granted for a fixed term of five (5) years. The Department will notify each applicant, by letter, when authority to operate under this general permit is granted.

Authority to operate Diesel Fired Engine(s) required to operate any portable nonmetallic mineral processing plants under this Diesel Engine(s) General Permit is granted for no longer than 24 months if it is temporarily located at construction sites. Authority to operate the same plant beyond 24 months would require a new authorization, in writing, from the Department.

13. Permit Fees:

The Diesel Engine(s) General Permit establishes the following application and renewal fees payable every five (5) years if no equipment changes occur:

Three hundred seventy five dollars.

An additional application fee as indicated above is required each time the permittee installs or modifies a diesel-fired internal combustion engine. The installation or modification of a diesel-fired internal combustion engine must be conducted according to the terms and conditions of this general permit. Two (2) or more diesel-fired engines may be installed under a single plan approval fee.

14. Expiration and Renewal of Authorization to Use Diesel Engine(s) General Permit:

The permittee's right to operate under this Diesel Engine(s) General Permit terminates on the date of expiration of the authorization to operate under this permit unless a timely and complete renewal application is submitted to the Department 30 days prior to the permit expiration date.

Upon receipt of a complete and timely application for renewal, the diesel-fired internal combustion engines may continue to operate subject to final action by the Department on the renewal application. This protection shall cease to exist if, subsequent to a completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information required by the Department to process the renewal application.

The Diesel Engine(s) General Permit application for renewal shall include: the identity of the owner or operator; location of the diesel-fired internal combustion engines; current permit number; description of the engines and equipment located at the facility; information regarding previously imposed limitations; the appropriate renewal fee listed in Condition 13; and, any other information requested by the Department. At a minimum, the permit renewal fee shall be submitted to the Department at least 30 days prior to the expiration of the Diesel Engine(s) General Permit.

15. Applicable Laws:

Nothing in this Diesel Engine(s) General Permit relieves the permittee of its obligation to comply with all applicable Federal, state, and local laws and regulations.

16. Prohibited Use:

Any stationary air contamination source that is subject to the requirements of 25 *Pa. Code* Chapter 127, Subchapter D (relating to prevention of significant deterioration), 25 *Pa. Code* Chapter 127, Subchapter E (relating to new source review), 25 *Pa. Code Chapter* 127, Subchapter G (relating to Title V operating permits), or 25 *Pa. Code* §129.91 (relating to control of major sources of NO_x and VOCs) may not operate a diesel-fired internal combustion engines under this Diesel Engine(s) General Permit. Title V facilities may use this Diesel Engine(s) General Permit as a plan approval when the major new source review and prevention of significant deterioration review requirements are not applicable.

17. Transfer of Ownership or Operation:

The permittee may not transfer the authorization to operate diesel engine(s). New owners or operators shall submit a new application and fees as described in Condition 13.

18. Department and Municipality Notification:

The permittee shall notify the Department and the municipality prior to relocation of any diesel-fired engine(s) used for operating a portable nonmetallic mineral processing plant as required under 25 *Pa. Code* §127.641(b)(2). The notification for relocation of any diesel-fired engine(s) to the Department and the municipality shall be either hand delivered or transmitted by certified mail return receipt requested as required under 25 *Pa. Code* §127.641(c).

19. Start-up and Shut-down Exclusion:

The emission limitations stated in Condition 7 of this General Permit shall apply at all times except during periods of start-up and shut-down, provided, however, that the duration of start-up and shut-down do not exceed one hour per occurrence.

20. Emission Limitations and/or Operating Requirements Previously Established Pursuant to Best Available Technology and/or Imposed to Give Synthetic Minor Status:

This Diesel Engine(s) General Permit cannot be used to vacate or reestablish best available technology or other emission limitations or requirements established through the air quality permitting process. Also, this General Permit was not intended to establish a new best available technology or other emissions limitations previously established through the air quality permitting process. The Department shall memorialize these limitations in the letter of authorization granted in accordance with Condition 2.

Note: A permittee may choose to apply for a plan approval for an engine in lieu of this general plan approval. If this option is chosen the applicable requirements shall be determined on a case-by-case basis.

Approved by: _____
Joyce E. Epps
Director
Bureau of Air Quality

Date Approved: March 17, 2005

