

Pre Approved Emission Limit Applicability Guidance

The Pre Approved Emission Limits (PAEL) <formerly known as pre-approved limits> for small stationary diesel engine installations established in 18 AAC 50.230 are designed to hold potential emissions from this type of stationary source to less than 100 tons of nitrogen oxides, thereby avoiding the requirement for an air quality control Title V permit.

Based on an October 1, 2004 rule change, there are three situations for which an owner or operator of a small diesel engine installation may not require a Pre-Approved Emission Limit because source emissions do not approach 100 tons per year without a limit.

These situations may also apply if the stationary source has a combination of diesel engines and other fuel burning equipment not included in the emission and fuel consumption limit under the PAEL. However, for such combination stationary sources, the owner or operator must also consider and account for potential emissions of other stationary equipment when comparing the stationary source's potential emissions to the 100 ton per year threshold.

- **Total Generating Capacity less than 736 hp or 549 KW**

The emission factor on which the PTE calculation is based comes from the EPA publication AP-42 from table 3.3-1. The emission factor is 0.031 lbs of NO_x / hp-hr.

Using this emission factor, a diesel engine installation must have no greater than 736 installed horsepower (549 kW) capacity to approach 100 tons of NO_x emissions in a year.

$$\frac{736 \text{ hp} \times .031 \text{ lbs NO}_x / \text{hp-hr} \times 8760 \text{ hr / yr}}{2000 \text{ lbs / ton}} = 99.9 \text{ tons of NO}_x / \text{year}$$

If the total rated capacity of all stationary diesel engines at the installation does not exceed 736 hp or 549 kW, and there are no other emitting activities, then the stationary source does not have the potential to emit 100 tons or more of NO_x. The source does not require a Title V Permit. If the stationary source has a PAEL (old PAL), it would no longer be necessary to maintain this PAEL. The department will rescind the existing PAEL upon receipt of an owner or operator's request to rescind the PAEL.

If there are other emitting activities at the stationary source, then the total stationary diesel capacity may be somewhat less than 736 horsepower once the owner accounts for the emission contribution of these other activities.

- **Emergency Generators**

If all stationary diesel electric generating equipment installed at the stationary source is used strictly as emergency or standby power in the event that there is an interruption of the normal power supply, a Pre-Approved Emission Limit may no longer be necessary.

As of October 1, 2004, the Department uses EPA's September 6, 1995 Guidance to calculate potential to emit from emergency generators. The Guidance provides that diesel electric emergency generator

potential emissions need not be estimated at 8760 hours per year. Instead the permitting agency may determine potential to emit by using a reasonable and realistic estimate of the number of hours that the normal power supply can be expected to be unavailable, plus the number of hours for maintenance and training activities for the emergency equipment. EPA lists a value of 500 hours per year as an appropriate default assumption if historical information is unavailable.

If a stationary source with a Pre Approved Emission Limit (PAEL) for diesel emergency generators has a plant-wide potential to emit less than 100 tons per year, recalculated using this guidance, the source owner or operator no longer needs to retain this PAEL. The department will rescind the existing PAEL upon the owner or operator's specific request to rescind the PAEL.

$$\frac{\text{TOTAL Backup Emergency Engine hp} \times .031 \text{ lbs NOx / hp-hr} \times \text{OPERATING HOURS}^* \text{ hr / yr}}{2000 \text{ lbs / ton}}$$

= Potential to Emit NOx from engines

- The owner or operator can determine the how many hours a backup unit may operate in any one year based on historical use. If no history is available, the owner or operator may opt to use 500 hours per year as the default multiplier in this formula based upon EPA policy. However, the department prefers actual data.

As stated above, if other emitting activities also occur at the installation, the owner or operator may need to account for the potential to emit from other stationary sources with the stationary engine emissions to compare with the plant-wide 100 ton per year threshold.

• **Mixed Use – Power Generation AND Emergency Backup**

In certain instances where the stationary source has a mixed-use of diesel electric generators for electric generation and backup emergency capacity, a PAEL may not be necessary. To determine applicability, the owner or operator must first designate those diesel electric generators located at the stationary source used solely for emergency power generation. Then the owner or operator may determine the potential to emit using the below formula: In order to convert kW to hp, multiply the kW rating x 1.34 hp/kW.

$$\frac{\text{TOTAL Electric Generating (non-backup) Engine hp} \times .031 \text{ lbs NOx / hp-hr} \times 8760 \text{ hr / yr}}{2000 \text{ lbs / ton}}$$

+

TOTAL Backup Emergency Engine hp x .031 lbs NO_x / hp- hr x OPERATING HOURS* hr / yr

2000 lbs / ton

= Potential to Emit NO_x from engines

*The owner or operator can determine the how many hours a backup unit may operate in any one year based on historical use. If no history is available, the owner or operator may opt to use 500 hours per year as the default multiplier in this formula based upon EPA policy. However, the department prefers actual data.

As stated above, if other emitting activities also occur at the installation, the owner or operator may need to account for the potential to emit from other stationary sources with the stationary engine emissions to compare with the plant-wide 100 ton per year threshold.

To have a PAEL rescinded, the stationary source's Total Potential to Emit must be less than 100 tons of NO_x per year.

The owner or operator of any stationary source that currently holds a PAEL and can demonstrate that the source does not have potential emissions approaching 100 tons per year without limits may request the department rescind its PAEL by taking one of the following steps:

1. Write a letter to: Supervisor, Air Permit Program, 619 E. Ship Creek Ave., Suite 249, Anchorage, Alaska 99501. Include a list of the current installed diesel electric generators at the stationary source. Show the total engine brake horsepower or electrical generating capacity. The letter should state that the total capacity of the engines is less than 736 brake horsepower or 549 kW. Include a list of all other fuel burning equipment, such as heaters, combustion turbines and boilers (if any). Show the total capacity of combustion turbines, heaters and boilers. The letter should request the Department to rescind the current stationary source PAEL. The letter must be signed and certified by the Stationary Source's responsible official as required by 18 AAC 50.205;

OR

2. For emergency backup power plants, write a letter to: Supervisor, Air Permit Program, 619 East Ship Creek Ave., Suite 249 , Anchorage , Alaska 99501 . Include a list of the current installed diesel electric generators at the stationary source. List the total rated capacity of the engines at the stationary source. State that the diesel electric generators are strictly for emergency use if the normal power supply is interrupted. Include a list of all other fuel burning equipment, such as heaters, combustion turbines and boilers (if any). Show the total capacity of combustion turbines, heaters and boilers. The letter must request that the Department rescind the current stationary source PAEL. The letter must be signed and certified by the Stationary Source's responsible official as required by 18 AAC 50.205;

OR

3. For a source with both emergency and non-emergency generators, write a letter to: Supervisor, Air Permit Program, 619 E. Ship Creek Ave., Suite 249 , Anchorage , Alaska 99501 . Include a list of the current

installed diesel electric generators at the stationary source. . The letter must state the total rated capacity of the emergency engines and total rated capacity of non-emergency engines at the stationary source. Designate the specific use for each generator (i.e. emergency backup or power generation). Include a list of all other fuel burning equipment, such as heaters, combustion turbines and boilers (if any). Show the total capacity of combustion turbines, heaters and boilers. Attach emission calculations determined in accord with the method listed in item C. above. The letter must request that the Department rescind the current PAEL for the stationary source. The letter must be signed and certified by the stationary source's responsible official as required by 18 AAC 50.205.

Note: The Department does not automatically rescind PAELS based upon the October 2004 rule change and endorsement of EPA policy. The owner or operator of the stationary source must initiate the request to rescind a PAEL. All PAELs currently in effect will remain in effect until the department rescinds the PAEL.