

## 6 NYCRR Part 227-2: Reasonably Available Control Technology (RACT) for Oxides of Nitrogen (NOx)

June 1997

New York State's air regulation Part 227-2, "Reasonably Available Control Technology (RACT) for Oxides of Nitrogen (NOx)," applies to large and small boilers (furnaces) and internal combustion engines. NOx is one of the gaseous air pollutants that results from the combustion of fossil fuels, such as oil or natural gas. A facility's location within New York State and its potential to emit (PTE) air pollution determine whether or not the NOx RACT requirements apply.

**This fact sheet summarizes the applicability and requirements of Part 227-2.** Additional technical information is available by calling the Small Business Assistance Program (SBAP) at the toll-free number below for free and confidential help. Fact sheets about New York State air permitting as it applies to combustion sources are also available.

### Applicability of NOx RACT Requirements

The state has two different applicability levels. The threshold at which NOx RACT applies is much lower downstate (in New York City and Nassau, Suffolk, Westchester, Rockland, and Lower Orange Counties), because this area is classified as a severe ozone non-attainment area. Ozone levels in this area greatly exceed (violate) that national air quality standards for this pollutant. Downstate, the requirements apply to facilities with a PTE of 25 tons/yr or more of NOx. For the rest of the state, the threshold is a PTE of 100 tons/yr or more of NOx.

### Translating PTE Into Boiler/Engine Capacity

Table 1, on the reverse, estimates the boiler/engine capacity (by type of fuel) associated with a PTE for NOx emissions that would trigger the NOx RACT requirements. Keep in mind that these values are associated with a boiler or engine operating around-the-clock and at maximum capacity, which is the definition of PTE. Facilities whose total boiler or engine heat input capacity equals or exceeds these values must either comply with the NOx RACT requirements or limit their NOx PTE through conditions in a New York State permit. Refer to the fact sheet on capping out of NOx RACT for more information about such permit conditions.

### PTE Derived From Fuel Usage

Another way to determine if NOx RACT applies to your facility is to evaluate your annual fuel usage. Table 2, on the reverse, lists the fuel usage associated with NOx emissions that would trigger the NOx RACT requirements. These values are based on the boiler having a maximum heat input capacity of 100 million Btu per hour (mmBtu/hr) or less; because larger boilers typically have higher emissions, they may have lower fuel usages associated with the NOx RACT thresholds.

(over)

#### Need more facts?

For technical assistance and for help with permitting, call the Small Business Assistance Program (SBAP) of the New York State Environmental Facilities Corporation  
**(800) 780-7227**

For information about regulations, compliance financing assistance, and assistance resolving regulatory difficulties, contact the Environmental Ombudsman Unit of Empire State Development  
**(800) 782-8369**

Both offer free and confidential assistance to small businesses.

The New York State  
Small Business  
Stationary Source  
Technical  
and  
Environmental  
Compliance  
Assistance  
Program

**Table 1. Total Capacities for Boilers/Engines That Trigger NOx RACT\***

<b>Fuel Type</b>	<b>Capacity that Approximates a PTE of 25 tons/yr (Downstate)</b>	<b>Capacity that Approximates a PTE of 100 tons/yr (Upstate)</b>
<b>Boilers</b>		
residual oil	11.4 mmBtu/hr	45.6 mmBtu/hr
distillate oil	40.9 mmBtu/hr	163.9 mmBtu/hr
natural gas	40.9 mmBtu/hr	163.9 mmBtu/hr
<b>Engines</b>		
diesel fuel/natural gas	1.68 mmBtu/hr	6.75 mmBtu/hr

\* “Total” means the sum of all boilers/engines at the facility. These capacities are facility-wide.

**Table 2. Annual Fuel Usages Associated With NOx RACT Applicability Thresholds\***

<b>Location</b>	<b>Residual Oil (gal/yr)</b>	<b>Distillate Oil (gal/yr)</b>	<b>Natural Gas (cubic ft/yr)</b>
New York City and Nassau, Rockland, Westchester, Suffolk, and Lower Orange Counties	666,000	2,499,000	357,000,000
Rest of New York State	2,664,000	9,996,000	1,428,000,000

\* For boilers whose maximum heat input capacity is 100 mmBtu/hr or less.

## Methods to Limit PTE

DEC’s Air Emissions Permits offer two ways to limit, or “cap,” your emissions:

- Part 201, “Permits and Registrations,” allows a facility to “cap by rule” through the Registration process if it can limit its emissions to less than 50% of the applicability thresholds (less than 12.5 tons/yr downstate and less than 50 tons/yr upstate).
- Part 201 also allows a facility to limit its emissions by obtaining a State Facility Permit, if its emissions are above the 50% level but below the applicability level (between 12.5 and 25 tons/yr downstate and between 50 and 100 tons/yr upstate). DEC has developed a General Permit that many combustion sources can use to obtain a State Facility Permit. Refer to the fact sheet on the General Permit for more information.

Limiting emissions, or “capping,” with New York State Air Permits is addressed more fully in a separate fact sheet.

## NOx Compliance

Facilities that are subject to NOx RACT must comply with the following requirements:

- Small boilers (those whose capacity is less than 50 mmBtu/hr) must conduct an annual tune-up. There is a guidance document available from either the SBAP or DEC that includes all of the necessary components of an acceptable tune-up.
- Larger boilers (greater than 50 mmBtu/hr) must install approved low-NOx burners (residual oil units must also utilize 10% flue gas recirculation) and/or meet fuel-specific emission limits, depending on boiler size.
- Internal combustion engines must meet either a lean-burn or rich-burn NOx emission limit. The most cost-effective way to meet the emission limit is by retarding the timing on the engine. Any source subject to an emission limit must perform a stack test to demonstrate compliance.

## Other Considerations—SO<sub>2</sub> Emissions

In certain parts of New York State, a combustion facility may be a Minor NOx source, and thus not subject to NOx RACT, but still be a Major source of sulfur dioxide (SO<sub>2</sub>) emissions. The facility must then apply for a Title V permit by June 9, 1997, unless their Standard Industrial Classification (SIC) code has a later Title V date. Consult the fact sheet on capping out of NOx RACT for the fuel usage levels that would make a facility a Major source.

## For More Information

The SBAP can assist you in calculating your current emission levels and determining the applicable requirements. In addition, we can assist in the development of a compliance plan for your facility and help you complete the appropriate permit or registration application. Assistance is free and confidential.