

FACT SHEET

PROPOSED RULE SETTING THE STANDARDS OF PERFORMANCE FOR STATIONARY COMBUSTION TURBINES

ACTION

- On February 9, 2005, the Environmental Protection Agency (EPA) proposed a rule that would reduce emissions of air pollutants from new stationary combustion turbines. These proposed requirements would apply to new turbines with a peak rated power output greater than or equal to 1 megawatt (MW). These turbines are used at facilities such as power plants, pipeline compressor stations, and chemical and manufacturing plants.
- These proposed standards, known as New Source Performance Standards (NSPS), would apply to new turbines and reflect changes in nitrogen oxides (NO_x) emission control technologies and turbine design since the NSPS for stationary combustion turbines were originally promulgated in 1979.
- New, modified and reconstructed turbines would have to comply with the proposed rule. A new turbine is defined as one that commences construction after the date of proposal and would have to comply upon startup. Modified or reconstructed sources would have up to 6 months after the rule is final, or 6 months after startup, whichever is later, to demonstrate compliance with the new standards.
- The proposed rule would reduce emissions of NO_x and sulfur dioxide (SO₂).
- The proposed rule would require that new turbines meet the following emission limits for NO_x:
 - ▶ Natural gas-fired turbines below 30 MW meet an emission limit of 132 nanograms per Joule (ng/J) [1.0 pound per megawatt-hour (lb/MW-hr)].
 - ▶ Oil and other fuel-fired turbines below 30 MW meet an emission limit of 234 ng/J (1.9 lb/MW-hr).
 - ▶ Natural gas-fired turbines greater than or equal to 30 MW meet an emission limit of 50 ng/J (0.39 lb/MW-hr).
 - ▶ Oil and other fuel-fired turbines greater than or equal to 30 MW meet an emission limit of 146 ng/J (1.2 lb/MW-hr).
- The proposed standard for SO₂ is the same for all turbines, regardless of size and fuel type. All new turbines would be required to meet an emission limit of 73 ng/J (0.58 lb/MW-hr). Alternatively, a fuel sulfur content limit of 0.05 percent by weight [500 parts per million (ppmw)] could be met.
- EPA expects that most owners or operators of new turbines would be able to comply with the NO_x limit without installing add-on emissions controls. Most new turbines already utilize lean premix technology, which has inherently low NO_x emissions. A few turbines

may need to install a selective catalytic reduction (SCR) control device to meet the NO_x limit.

- EPA expects that all owners and operators of new turbines will comply with the option of demonstrating low sulfur content of their fuels rather than stack testing for SO₂. Fuel oil and pipeline natural gas contain low levels of sulfur and are widely available.
- EPA estimates that 355 new stationary combustion turbines would be subject to the rule, as proposed, by the end of the 5th year after the final rule takes effect.
- Comments may be submitted on the proposed action for 60 days following publication of the proposed rule in the Federal Register.

HEALTH/ENVIRONMENTAL BENEFITS

- The proposed rule would provide improvements in protecting human health and the environment by reducing pollutant emissions. The EPA estimates that the total pollutant reductions will be over 830 tons per year of criteria pollutants in the 5th year after the rule is final. The proposed rule would reduce NO_x and SO₂ emissions limits by over 80 and 93 percent, respectively.
- An output-based standard relates the emissions to the productive output of the process; in this case, pounds of emissions are related to the power output, or MW-hour. The output-based standards in the proposed rule would allow owners and operators the flexibility to meet their emission limit targets by increasing the efficiency of their turbines. The use of more efficient technologies reduces fossil fuel use, and reduces environmental impacts associated with the production and use of fossil fuels.
- Pollutants such as NO_x and SO₂ may cause both temporary and long-term respiratory symptoms, such as shortness of breath, changes in airway responsiveness, and increased susceptibility to respiratory infection.
- Nitrogen oxides can react in the air to form ground-level ozone. Ozone can cause coughing, shortness of breath, and aggravate asthma, and other chronic lung diseases such as emphysema and bronchitis. Ozone can lead to reduced lung function in both children and adults.
- NO_x and SO₂ also can form fine particle pollution. Exposure to fine particle pollution is associated with significant adverse health effects including shortness of breath, bronchitis, asthma attacks, heart attacks and premature death.
- Both NO_x and SO₂ are major precursors to acid rain, which, when deposited, are associated with acidification of soil and surface water.

COST

- EPA estimates the total nationwide annual costs for the rule, as proposed, to be \$3.4

million in the 5th year.

BACKGROUND

- The Clean Air Act requires EPA to promulgate NSPS for stationary combustion turbines. The standards must consider emission control technologies available and costs of control.
- New source performance standards are a statutory requirement under section 111 of the Clean Air Act. The original NSPS for stationary combustion turbines were promulgated under subpart GG of 40 CFR part 60 in 1979. Under the Clean Air Act, the Administrator is required to review the standards at least every 8 years, and revise the standards as appropriate.
- Since EPA originally promulgated new source performance standards for stationary gas turbines in 1979, technological advances have led to improvements in:
 - nitrogen oxide emissions control devices,
 - emissions monitoring devices,
 - emissions test methods,
 - combustion efficiency and turbine design, and
 - the composition of fuels used for gas turbines.
- The proposed standards reflect the performance and emissions of today's new stationary combustion turbines without the use of add-on controls.

FOR MORE INFORMATION

- To download the proposed rule from EPA's web site, go to "Recent Actions" at the following address: <http://www.epa.gov/ttn/oarpg>.
- For further information about the rule, contact Mr. Jaime Pagán at EPA's Office of Air Quality Planning and Standards at 919-541-5340.
- For other combustion-related regulations, visit EPA's Combustion Related Rules page at: <http://www.epa.gov/ttn/combust/list.html>.