Regulatory Announcement

Advance Notice of Proposed Rulemaking for Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder

The U.S. Environmental Protection Agency is inviting comment from all interested parties on a plan to propose more stringent emission standards and other provisions for new marine diesel engines with per-cylinder displacement at or above 30 liters. We refer to these engines as Category 3 marine engines. We are considering standards for achieving large reductions in oxides of nitrogen (NOx), particulate matter (PM), as well as sulfur oxides (SOx) through the use of technologies such as in-cylinder controls, aftertreatment, and low-sulfur fuel. EPA will consider comments from the public in the effort to prepare a complete rulemaking proposal for new emission standards for these engines. This fact sheet contains an overview of the program under consideration.

Overview

In this Advance Notice of Proposed Rulemaking, we are announcing our plan to propose an additional tier of emission standards and other related provisions for new marine compression-ignition engines at or above 30 liters per-cylinder displacement (known as Category 3 marine diesel engines). These engines are primarily used in large ocean going vessels, most of which are flagged outside of the United States. These engines are significant contributors to our national mobile-source emission inventory. Emissions from Category 3 engines account for a substantial portion of the U.S. nonattainment ambient PM2.5 and NOx levels in many areas of the country and these inventories are expected to grow significantly due to expected increases in foreign trade. Reducing emissions from these engines will lead to significant public-health benefits and will help states and localities attain and maintain PM and ozone National Ambient Air Quality Standards.

Background

EPA adopted standards in January 2003 for new Category 3 compression-ignition marine engines at or above 30 liters per-cylinder displacement (see 68 FR 9746, published February 28, 2003). The program we adopted reflected a two-part approach.

United States Environmental Protection Agency

Office of Transportation and Air Quality

EPA420-F-07-050
November 2007

EPA evaluated the emissions-control potential from various kinds of technology, alone or in combination, including (1) the in-cylinder controls currently used on new marine engines to meet the international consensus NOx standards contained in the International Convention for the Prevention of Pollution from Ships (a treaty known as "MARPOL Annex VI"); (2) additional use and optimization of these controls; and (3) more advanced technologies such as SCR and water injection. EPA concluded that it would not be appropriate to adopt long-term technology-forcing standards in that rulemaking. Instead, we set a near-term standard effective in 2004 that is equivalent to the MARPOL Annex VI oxides of nitrogen standard and can be achieved through existing emissions-control technology.

The Need to Reduce Emissions from Category 3 Marine Diesel Engines

Category 3 marine diesel engines are significant contributors to our national mobile-source emission inventory. Category 3 marine diesel engines being produced today must meet relatively modest emission requirements and therefore generate significant emissions of fine particulate matter (PM2.5), NOx and SOx that contribute to nonattainment of the National Ambient Air Quality Standards for PM2.5 and ozone. These engines also emit volatile organic compounds, carbon monoxide, and hazardous air pollutants or air toxics that are associated with adverse health effects. Emissions from these engines also cause harm to public welfare, contributing to visibility impairment and other detrimental environmental impacts across the United States.

Many of our nation's most serious ozone and PM2.5 nonattainment areas are located along our coastlines where vessels using Category 3 marine engine emissions are found in ports that are often located in or near urban areas where significant numbers of people are exposed to these emissions. The contribution of these engines to air pollution is substantial and is expected to grow in the future. Based on our newly completed emission inventory analysis, we estimate that these engines contributed nearly 6 percent of mobile-source NOx, more than 10 percent of mobile-source PM2.5, and about 40 percent of mobile-source SO2 in 2001. We estimate that their contribution will increase to about 34 percent of mobile-source NOx, 45 percent of mobile-source PM2.5, and 94 percent of mobile-source SO2 by 2030 without further controls on these engines. Reducing emissions from these engines will lead to significant public health benefits.

Exhaust Emission Standards

This rulemaking process is being carried out simultaneously with negotiations for a new tier of international marine diesel engine standards. The potential emission standards discussed in this Advance Notice of Proposed Rulemaking are largely based on a proposal submitted by the United States government to the 11th meeting of the Subcommittee on Bulk Liquids and Gases at the International Maritime Organization, held in April 2007. The standards under consideration consist of two tiers of NOx emission standards and performance-based SOx and PM standards.

The Tier 2 NOx standards, which could begin as early as 2011, would achieve a 15 to 25 percent NOx reduction below the current Tier 1 emission levels. The Tier 3 NOx standards, which could begin as early as 2016 and would apply while ships are operated in specially designated areas, would reduce NOx 80 percent below the Tier 2 standards. The performance-based SOx and PM standards would also apply while ships are operating in those special areas and could begin

as early as 2011. These performance-based standards could be met through the use of low-sulfur distillate fuel, on the order of 1,000 parts per million, or through the use of exhaust aftertreatment technologies such as SOx scrubbers. Finally, the program contains NOx limits that would apply to engines on existing vessels that would reduce their emissions by 15 to 20 percent.

Public Participation Opportunities

We are releasing this Advance Notice of Proposed Rulemaking to encourage full participation in the rulemaking development process. We especially encourage commenters to provide specific suggestions and data in the areas we identify in the proposal. EPA will consider comments from the public in the effort to prepare a complete rulemaking proposal for new emission standards for these engines.

For information on how to submit written comments, please see the Federal Register. Comments will be accepted until February 29, 2008. All comments should be identified by Docket ID No. EPA-HQ-OAR-2007-0121 and submitted by one of the following methods:

Internet: www.regulations.gov
E-mail: A-and-R-Docket@epa.gov
Mail:
Air and Radiation Docket and Information Center
U.S. Environmental Protection Agency
Mailcode 6102T
1200 Pennsylvania Ave., NW
Washington, DC 20460
Hand Delivery:
EPA Docket Center
3334 EPA West Building
1301 Constitution Ave., NW
Washington, DC

For More Information

You can access the Advance Notice of Proposed Rulemaking and related documents on EPA's Office of Transportation and Air Quality Web site at:

www.epa.gov/otaq/oceanvessels.htm

For more information, please contact the Assessment and Standards Division at asdinfo@epa.gov, 734-214-4636, or:

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