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EPA's new Nonroad Diesel Rule: Controlling emissions from diesel engines



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"Nonroad diesel engines"—engines found in equipment such as backhoes, forklifts, earth movers and tractors—are used primarily in construction, industrial, mining and agricultural operations. The term also covers utility equipment such as generators and pumps. For decades, exhaust from nonroad diesel engines has polluted America's air, causing emissions of nitrogen oxides (NOx), sulfur oxides (SOx) and particulate matter (PM), which have been found to be harmful to human health and to the environment.

Effective Aug. 30, 2004, the U.S. Environmental Protection Agency's (EPA) Clean Air Nonroad Diesel Rule (Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel, 69 Fed. Reg. 38,958; June 29, 2004) limits emissions from nonroad diesel equipment engines through the use of a comprehensive emission control system that combines cleaner engine technologies with cleaner fuel. The new rule imposes stringent pollution con-

trols on diesel engines and mandates a significant reduction in the sulfur content of nonroad diesel fuel. This article summarizes important Nonroad Diesel Rule provisions and highlights their likely impact on the environment as well as construction, industrial, mining and agricultural equipment users.

EPA's Scheme to Control Diesel Emissions

Since 1993, under the Clean Air Act Amendments of 1990, the EPA has taken numerous steps and coordinated its efforts to reduce NOx, SOx and PM emissions from mobile diesel sources. The new Nonroad Diesel Rule is a significant expansion of this initiative. An earlier, separate EPA rule targeting diesel emissions from highway trucks and buses—The Clean Diesel Truck and Bus Rule of 2000 ("2000 clean highway program")—thus far has been a success, and the EPA's new nonroad rule will complement the 2000 rule.

The EPA also has recently announced a third and separate

proposed rulemaking that will apply similar diesel emission reduction standards to new and existing locomotives and new marine watercraft. Under this rule, the EPA is considering new emission standards, effective as early as 2011, modeled on the 2000 Clean Highway Program and Nonroad Diesel Rule, that will significantly reduce diesel emissions through the use of advanced control technologies. (In the locomotive and new marine rule, it is anticipated that the EPA will impose stringent emission standards on all new commercial, recreational and auxiliary marine diesel engines—except the very large diesel engines used for propulsion on deep sea vessels.)

The Clean Air Nonroad Diesel Rule of 2004

The Clean Air Nonroad Diesel Rule of 2004 is a comprehensive national program for reducing emissions of NOx, SOx and PM from nonroad diesel engines used primarily in construction, industrial, mining and agricultural operations. It seeks to reduce emissions through two separate approaches.

First, the new rule requires diesel engine manufacturers to produce new engines with advanced emission control technologies—similar to catalytic converter technology on cars in the 1970s—that will reduce exhaust emissions by 90 percent. These new engine standards will begin to take effect in the 2008 model year, and will be phased in over a period of years, through 2014.

Second, in order to ensure the effectiveness of the emission control technology, the EPA has also adopted standards to reduce the sulfur levels in nonroad diesel fuel by 99 percent. These new diesel fuel controls will begin to take effect in mid-2007. (See Nonroad Diesel Rule, 69 Fed. Reg. 38,958.)

Who is affected?—The Nonroad Diesel Rule is primarily applicable to those industries and manufacturers that: (1) produce or import new diesel engines, (2) produce or import new diesel equipment, or (3) produce or import diesel fuel. It is clear, however, that the new rule also will directly impact the end-users of construction, industrial, mining and agricultural equipment by burdening them with additional costs. The increased expenses of nonroad diesel equipment, equipment operation and equipment maintenance, together with the added costs of nonroad diesel fuel, will undoubtedly affect profits of these users. EPA estimates that the emission control technology, once implemented, will increase the cost of the total purchase price of new nonroad diesel equipment by one percent to three percent. The price of diesel fuel with the reduced sulfur content will increase by four to seven cents per gallon.

What are the benefits?—Despite these additional costs imposed by the new rule, the benefits to health, property and the environment are expected to outweigh the costs. Diesel exhaust, a known carcinogen, has long been known to contribute to respiratory problems and other ailments. When the nonroad diesel program is fully implemented, the EPA estimates that the resulting improved air quality will annually prevent: 12,000 premature deaths, one million lost work days, 15,000 heart attacks, 6,000 asthma-related emergency room visits and 8,900 hospitalizations. According to EPA statistics set forth in the preamble to the new rule, the cumulative effect of the emissions reductions will be the equivalent of two million fewer pieces of equipment in operation. NOx emissions will be reduced by approximately 738,000 tons annually, PM will be reduced by approximately 129,000 tons annually and SOx emissions will be virtually eliminated. Through the EPA's detailed cost-benefit analysis, it is estimated that the health and environmental benefits will outweigh the additional costs imposed by the rule by a ratio of forty-to-one (40:1). (See Nonroad Diesel Rule, 69 Fed. Reg. 38,958 at 38,961.)

Conclusion

By implementing a widespread emission control system that combines cleaner engine technologies with cleaner fuel, the Clean Air Nonroad Diesel Rule constitutes a major step forward in the EPA's effort to reduce NOx, SOx and PM emissions from mobile sources. As a result, the nation's air quality will be vastly improved, benefitting both public health and the environment. The improvements, however, will not come without a cost. While nonroad equipment manufacturers and diesel fuel refiners will be directly impacted, the end users of diesel equipment should be aware that they will bear the burden of the new rule through higher costs and prices. ■

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