

with the exhaust gas temperature on the outlet side of the exhaust emission control device is less than 250 degrees Celsius.

b. Comment Request on an Alternative NTE Approach

In addition the Agency requests comment on the following set of NTE specifications as an alternative to those NTE provisions proposed. This alternative NTE would use the same numeric standard values as under the proposed NTE standards discussed in section III.D.1a, however, the test procedure itself is quite different, as described below. The Agency believes that these alternative specifications and the range of operation covered by the standard would provide for similar, if not more robust nonroad engine compliance compared to the application of the proposed NTE specifications to nonroad engines. These alternative provisions have been developed to emphasize compliance over all engine operation, including engine operation that would not be covered under the proposed NTE approach. In addition these specifications were developed specifically to simplify on-vehicle testing for NTE compliance. The NTE control area would include all engine operation. The averaging intervals over which NTE standards must be met are different than the 30-second minimum set in the proposal. They are variable in time but are constant as a function of work. Emissions would be measured over a constant averaging work interval, determined as ten percent (10%) of the total work performed by the engine over a specified period of time (*e.g.*, a minimum of six hours of operation). This 10% window of work “moves” through data at one percent (1%) increments so as to always return about ninety (90) individual data points for direct comparison to the NTE standards.

Comments should address the potential exclusive use of these alternative provisions for nonroad diesel engine NTE compliance. For more detailed information on these alternative NTE provisions, refer to Preamble section VIIG “Not-to-Exceed Requirements” and chapter 4 of the draft RIA of this proposal.

2. Plans for a Future In-Use Testing and Onboard Diagnostics

In addition to the proposals in this notice, EPA is currently reviewing several related regulatory provisions concerning control of emissions from nonroad diesel engines. They are not included in this proposal, as EPA believes these aspects of an effective emission control program would benefit

from further evaluation and development prior to their proposal. EPA intends to explore these provisions further in the coming months and publish a separate notice of proposed rulemaking dealing with these issues. In particular, there are two issues which will be discussed: (1) A manufacturer-run in-use emissions testing program; and (2) OBD requirements for nonroad diesel engines. The Agency believes that it is appropriate to proceed with the current rulemaking, expecting that these two issues will be proposed in the near future. EPA expects these programs would be adopted in advance of the effective date of the engine emissions standards. This will allow us to gather information and work with interested parties in a separate process regarding these issues. EPA will work with all parties involved, including states, environmental organizations and manufacturers, to develop robust, creative, environmentally protective and cost-effective proposals addressing these issues.

a. Plans for a Future Manufacturer-Run In-Use Test Program

It is critical that nonroad diesel engines meet the applicable emission standards throughout their useful lives, to sustain those emission benefits over the broadest range of in-use operating conditions. The Agency believes that a manufacturer-run in-use testing program that is designed to generate data on in-use emissions of nonroad diesel engines can be used by EPA and the engine manufacturers to ensure that emissions standards are met throughout the useful life of the engines, under conditions normally experienced in-use. An effective program can be designed to monitor for NTE compliance and to help ensure overall compliance with emission standards.

The Agency expects to pattern the manufacturer-run in-use testing requirements for nonroad diesel engines after a program that is being developed for heavy-duty highway vehicles. In this latter program, EPA is committed to incorporating a two-year pilot program. The pilot program will allow the Agency and manufacturers to gain the necessary experience with the in-use testing protocols and generation of in-use test data using portable emission measurement devices prior to fully implementing program. A similar pilot program is expected to be part of any manufacturer-run in-use NTE test program for nonroad engines.

The Agency plans to promulgate the in-use testing requirements for heavy-duty highway vehicles in the December 2004 time frame. EPA anticipates

proposing a manufacturer-run in-use testing program for nonroad diesel engines by 2005 or earlier. As mentioned above, the nonroad diesel engine program is expected to be patterned after the heavy-duty highway program.

b. Onboard Diagnostics

Today's notice does not propose to require onboard diagnostic (OBD) systems for non-road diesel vehicles and engines. However, EPA has committed to creating OBD requirements for heavy-duty highway engines/vehicles over 14,000 lbs GVWR and will develop OBD requirements for nonoad in conjunction with or following the highway OBD development. The Agency will propose nonroad diesel OBD requirements, along with heavy-duty highway OBD requirements, because OBD is necessary for maintaining and ensuring compliance with emission standards over the lifetime of engines. We will gather further information and coordinate with the heavy-duty highway and nonroad diesel industry and other stakeholders to develop proposed OBD system requirements.

E. Are the Proposed New Standards Feasible?

Prior to 1990, diesel engines could be broadly grouped into two categories; indirect-injection (IDI) diesel engines that were relatively inexpensive while providing somewhat better fuel economy compared to gasoline engines, and direct-injection (DI) diesel engines that were substantially more expensive but which offered better fuel economy. The majority of diesel engines fell into the first category, especially in the case of passenger cars, smaller heavy-duty trucks and most nonroad engines below 200 horsepower.

Diesel engine technology has changed rapidly since the early 1990s with the widespread use of electronics, onboard computers and the rise to preeminence of turbocharged direct-injection diesel engines. While some IDI engines remain, especially in the low horsepower portion of the nonroad market, most new diesel engines (including higher horsepower nonroad diesel engines) are turbocharged and direct-injected. Today's diesel engine has significantly improved, compared to historic engines with regard to issues of most concern to the user including noise, vibration, visible smoke emissions, startability, and performance. At the same time environmental benefits have also been realized with lower NO_x emissions, lower PM emissions, and improving fuel economy. These changes have been most pronounced for smaller