

Regulatory Announcement

Proposed Changes to Test Procedures for Nonroad Engines and Heavy-duty Highway Engines

The U.S. Environmental Protection Agency (EPA) is proposing modified procedures for testing various categories of nonroad engines. We are also proposing to apply these same procedures to heavy-duty highway diesel engines. This common set of test requirements is intended to streamline laboratory efforts for EPA and industry and to form the basis for internationally harmonized test procedures for nearly all categories of engines.

Background

As part of our initiative to update the content, organization and writing style of our regulations, we are proposing revisions to our test procedures. We have grouped all our engine-dynamometer and field-testing procedures into one part entitled, “Part 1065: Test Procedures.” For each engine or vehicle sector for which we have recently promulgated standards (such as land-based nonroad diesel engines or recreational vehicles), we identify an individual part as the standard-setting part for that sector. These standard-setting parts then refer to one common set of test procedures in part 1065.

In the past, each engine or vehicle sector had its own set of testing procedures. There are many similarities in test procedures across the various sectors. However, as we introduced new regulations for individual sectors, the more recent regulations featured test procedure updates and improvements that the other sectors did not have. As this

process continued, we recognized that a single set of test procedures would allow for improvements to occur simultaneously across engine and vehicle sectors. A single set of test procedures is easier to understand than trying to understand many different sets of procedures, and it is easier to move toward international test procedure harmonization if we specify only one set of test procedures. Note that procedures specific to different types of engines or vehicles, such as test schedules designed to reflect the conditions expected in use for particular types of vehicles or engines, will be specified in the standard-setting part.

Overview of Proposal

Part 1065 is also advantageous for in-use testing because it specifies the same procedures for all common parts of laboratory and field testing. The proposal contains new provisions to help ensure that engine operation in the laboratory is much like in-use operation in the field. These new provisions will ensure that laboratory testing and field testing are conducted consistently.

In addition to reorganizing and rewriting the test procedures for improved clarity, we are proposing to make a variety of changes to improve the content of the testing specifications, including the following:

- Writing specifications and calculations in international units.
- Adding procedures by which manufacturers can demonstrate that alternate test procedures are equivalent to specified procedures.
- Including specifications for new measurement technology that has been shown to be equivalent or more accurate than existing technology.
- Adopting procedures that improve test repeatability and calculations that simplify determination of emission mass.
- Specifying new procedures for testing engines in the field.
- Defining calibration and accuracy specifications that are scaled to the applicable standard, which allows us to adopt a single specification that applies to a wide range of engine sizes and applications.
- Using a more comprehensive set of definitions, references, and symbols.

Some emission-control programs already rely on the test procedures in part 1065, including those for land-based nonroad diesel engines, recreational vehicles, and nonroad spark-ignition engines over 19 kW. We are also proposing to adopt the lab-testing and field-testing specifications in part 1065 for all heavy-duty highway engines. In the future, we may propose to apply the test procedures specified in part 1065 to other

types of engines, so we encourage companies involved in producing or testing other engines to stay informed of developments related to these test procedures.

For heavy-duty highway engines, the procedures in part 1065 would replace those currently published in 40 CFR part 86, subpart N. We are proposing a gradual transition from the part 86 procedures. We will allow the use of part 1065 procedures beginning in the 2006 model year. By the 2008 model year, part 1065 procedures will be required for any new testing. For all testing completed for 2007 and earlier model years, manufacturers may continue to rely on carryover test data based on part 86 procedures to certify engine families in later years. In addition, other subparts in part 86, as well as regulations for many different nonroad engines refer to the test procedures in part 86. We are including updated references for all these other programs to refer instead to the appropriate cite in part 1065.

We are also proposing to require manufacturers of heavy-duty highway engines to use ramped-modal testing to show that they meet steady-state emission standards using the Supplemental Emissions Test (SET), which applies for model year 2007 and later engines. The conventional approach for steady-state testing is to measure emissions separately for each mode. Ramped-modal testing involves a single, continuous emission measurement as the engine operates over the test modes in a defined sequence, including short transition segments between modes. Ramped-modal testing offers several advantages, including increased accuracy for measuring very low levels of particulate matter emissions and substantially reduced testing time.

For More Information

You can access documents on this proposed rule on the Office of Transportation and Air Quality Web site at:

www.epa.gov/otaq/largesi.htm

You can also contact us at:

U.S. Environmental Protection Agency
Assessment and Standards Division
2000 Traverwood Drive
Ann Arbor, MI 48105
Voice-mail: (734) 214-4636
E-mail: asdinfo@epa.gov