



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
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OFFICE OF
AIR AND RADIATION

May 5, 2006

CISD-06-010 (HD)

Dear Manufacturer:

**SUBJECT: Manufacturer-Run, Heavy-Duty In-Use Testing Program:
Vehicle Screening Guidance**

Enclosed with this letter is a guidance document outlining the process for accepting or rejecting vehicles for testing in the Heavy-Duty In-Use program. This document fulfills our intention to develop guidance addressing vehicle recruitment, screening and maintenance as described in the preamble of the June, 2005 final rule.

If you have any questions about this guidance, please contact Ms. Khesha Jennings of my staff at (202) 343-9499.

Sincerely,

A handwritten signature in black ink, appearing to read "Karl Simon".

Karl Simon
Acting Director
Compliance and Innovative Strategies Division

Enclosures

May 3, 2006

Manufacturer-Run, Heavy-Duty Diesel Engine In-Use Testing Program Vehicle Screening Guidance

I. Purpose

This guidance discusses a process for accepting or rejecting vehicles for testing in the manufacturer-run, in-use heavy-duty diesel test program. Following this guidance will help ensure that testing is performed on a diverse range of properly maintained and used vehicles. More specifically, this document describes pre-acceptance screening criteria that may be used to reject a prospective test vehicle based on the vehicle's maintenance history, physical condition, in-use operating characteristics, and other considerations. It also discusses the pre-acceptance maintenance or services that manufacturers may perform before or during testing. We are issuing this guidance in response to requests by manufacturers that the Agency should offer guidelines on how vehicles should be screened for participation in this program.

II. Background

On June 14, 2005 (70 FR 34594), EPA established a manufacturer-run, in-use emissions testing program for heavy-duty diesel vehicles starting in 2007 for gaseous pollutants and 2008 for particulate matter. In order to gain experience before these fully enforceable programs begin, a two-year pilot program was also adopted (i.e., 2005-2006 for gaseous pollutants and 2006-2007 for PM). This ground-breaking in-use test program will require engine manufacturers to measure exhaust emissions from their diesel engines using portable emissions measurement systems (PEMS). Also for the first time, all manufacturers will be regularly providing EPA with a significant quantity of emissions data generated from engines used in regular service, which we will evaluate to ensure the engines comply with specified emissions requirements. The rule is a result of an agreement between EPA, the California Air Resources Board, and the Engine Manufacturers Association. This program advances our clean diesel activities by helping to ensure that the benefits of more stringent emission standards are realized under real-world driving conditions. It will also benefit heavy-duty diesel engine manufacturers by providing valuable information that can be used to better understand and improve the in-use performance of these engines.

The in-use test program consists of two phases. The first phase of testing, Phase 1, is intended to quickly screen a designated heavy-duty diesel engine family for conformity with the applicable Not-To-Exceed (NTE) standards. Test vehicles must be operated over normal driving routes, carry routine loads during normal atmospheric/environmental conditions, and be driven by the vehicle's normal operator. Our intent is to record the emissions from five to ten test vehicles as they are used and operated on a normal day-to-day basis. Therefore, the recruiting of prospective test vehicles and actual testing in Phase 1 of the program should not involve any pre-screening, selection bias, or altered operating practices relative to the above generic factors (routes, loads, atmospheric/environmental conditions, and driver). At least during the initial years of the program, selection of vehicles from fleets sited near a manufacturer's facilities will not, on its own, constitute impermissible pre-screening or selection bias. Nonetheless, vehicles

must not be solely recruited from a single geographic area and must represent a wide range of real-world operation.

During the two-year pilot program period, only five vehicles from each designated engine family will be tested for those engine manufacturers participating in the in-use accuracy allowance development program. Under the fully enforceable in-use testing program, if at least three of ten vehicles tested in Phase 1 fail to comply fully with the vehicle-pass criteria, then additional testing may be required by EPA or volunteered by the engine manufacturer in a second phase of the program, or Phase 2. The purpose of this extended testing is to gain further information regarding the extent to which, and under what conditions, the vehicles from the designated engine family are exceeding the NTE limits established under the program. To accomplish these goals, EPA may direct an engine manufacturer to test one or more specific engine and emission control or power configurations (i.e., subclasses) within the designated engine family. We may also specify certain driving routes or other driving conditions (e.g., temperatures, altitudes, geographic conditions, or time of year). The engine manufacturer's recruiting, screening, and testing should reflect the above considerations.

III. Reporting and Recordkeeping Requirements

Screening and preparing vehicles for in-use testing under this program requires that certain information be either collected or produced during the process. This information must be reported to EPA as part of the test report or maintained as recordkeeping material. The engine manufacturer should consult 40 CFR Part 86, Sections 86.1908, 86.1910, and 86.1920, in addition to EPA's separate guidance on reporting requirements, to ensure that the requisite in-use testing information is correctly obtained and properly reported or retained.

Under certain circumstances, a prospective test vehicle may be rejected from the program either during the screening process (as distinguished from the broader vehicle recruiting process¹) or after testing has begun as described in the remainder of this guidance. Any such rejection during the screening process must be carefully documented and reported to EPA as provided for in the above referenced reporting guidance document. In a limited number of instances, an engine manufacturer must notify EPA prior to rejecting a prospective test vehicle. These instances are described in this guidance where relevant. In all cases, a rejected vehicle must be replaced with another candidate vehicle.

IV. Pre-Acceptance Screening

After recruiting a prospective test vehicle, but before accepting the vehicle into the test program, the engine manufacturer must screen each vehicle for proper use and maintenance, adherence to certain other requirements, and reject any vehicle from further consideration that fails this review. Some of these pre-acceptance screening criteria may be the same as used in the vehicle

¹ For this purpose, recruiting is generally defined as identifying prospective vehicles using public or private databases (or other similarly broad informational sources). Such methods and their results will be generally described to EPA as specified in the separate guidance on reporting requirements. Screening is initiated after a preliminary list of prospective vehicles is identified, as described above, and the first contact is made with the vehicle owner or operator. From that point on, more specific reporting requirements may apply as described in the reporting guidance.

recruitment process. This redundancy will help ensure the prospective test vehicle is indeed suitable for testing.

Descriptions of various screening criteria that may lead to a vehicle being disqualified are provided below.

A. Two Independent Vehicle Source Minimum

Prospective test vehicles must be obtained from at least two completely independent sources to ensure a diverse sample of vehicles. Under this requirement, test vehicles from a sole source that are recruited from different regions of the country do not qualify as two independent sources. Also, test vehicles may not be recruited solely from sources that are affiliated with one another through a formal business arrangement (e.g., sole or part ownership). Nevertheless, sources will be considered independent where their sole connection is that they lease their vehicles from the same lessor.

B. Mileage versus Useful Life

No prospective test vehicle may be rejected from testing for having high mileage, except those whose engines exceed their emissions-related regulatory useful life. No actions may be taken towards the recruitment of low or high mileage engines. Vehicles must be chosen without regard to accumulated mileage from those available from the independent source and having the proper engine family.

C. Minimum 3-Hour Non-Idle per Shift Day

An engine manufacturer must evaluate the prior use of each prospective test vehicle to ensure that it can be reasonably expected to operate in non-idle modes for at least 3 hours out of the vehicle's operational or shift day. Any vehicle that is unlikely to be operated in this manner must be rejected from the test program.

D. Vehicle Safety

An engine manufacturer should perform a thorough inspection of the prospective test vehicle's engine, chassis, and load to ensure it can be safely operated during in-use testing. A vehicle may be rejected from the test program for reasons that include:

- Expired safety or DOT sticker
- Excessively chaffed, frayed, or loose wiring
- Bad electrical or battery connectors
- Copious fluid, exhaust, or air leaks
- Excessively worn tires
- Malfunctioning brakes, turn signals, or headlights

- Any other problem that would reasonably cause unsafe vehicle operation, except for easily resolvable problems²

E. PEMS Mounting and Installation Constraints

We believe that engine manufacturers may reasonably be expected to provide brackets, clamps, exhaust pipe extensions, flexible exhaust couplings, exhaust elbows, sample line supports, power cord extensions, and other miscellaneous hardware necessary to properly and securely attach the flow meter, sample lines and the PEMS analytical unit to a variety of trucks. At the same time, we recognize that there may be some highly specialized truck configurations where installation will be too complex, time consuming, or potentially damaging to the truck to reasonably expect an independent vehicle source to participate without substantial disruption of operations or schedules. Similarly, there is a possibility that installing a PEMS unit could result in an unsafe condition or could be potentially damaging to the performance of the PEMS or to the PEMS itself. Therefore, an engine manufacturer may reject a prospective test vehicle if mounting or operating a portable emissions measurement system is determined to be infeasible, impractical, or unsafe even with the use of reasonable modifications or accessories such as those described above.

Examples of such mounting problems include situations where the body of the truck or the operation of the body of the truck interferes with installation and extensive mounting and bracketing work would be necessary to avoid the interference and maintain vehicle safety, trucks where there is no way to install the PEMS unit without exceeding applicable state or Federal dimensional limitations, and other similar situations.

We expect such rejections will be extremely limited and isolated to a specific sub-class of vehicle chassis or applications within an engine family. In general, EPA will avoid selecting engine families used exclusively or nearly exclusively in vehicles having severe PEMS mounting constraints. Also, to the extent incompatible engine families exist, they will likely be characterized by low production volumes. These families will be selected for testing less frequently than their larger volume counterparts, reducing the likelihood that unsuitable families will be selected for testing under the program.

F. Owner/Operator Refusal

A prospective vehicle is considered unavailable and, therefore, rejected from the test program if the owner or operator refuses to participate. Generally, such a refusal will be known at the time the engine manufacturer initially contacts the owner or operator during the vehicle recruiting process (as distinguished from the more in-depth vehicle screening process). Such an unavailable vehicle must be replaced by another prospective test vehicle.

To help facilitate successful vehicle recruitment, EPA is providing a form letter of introduction that can be used by the engine manufacturer to explain the purpose of in-use testing program and

² Easily resolvable problems include those that the owner/operator offers to quickly and effectively repair, or that the engine manufacturer could similarly resolve. Examples include burned out light bulbs, incorrect tire pressure, load restraint or cover problems, minor fluid or air leakage problems, etc.

assure owner/operator that they will not be held liable for the emissions performance of the vehicle. A copy of the letter is contained in Appendix 1.

G. Engine Must Be Representative of Engine Family

Each prospective vehicle for Phase 1 testing must be screened to ensure the engine is representative of the sub-classes or configurations within an engine family. For example, engine manufacturers should avoid a sub-class or configuration within an engine family that is marketed primarily for special uses that are not very numerous. Manufacturers can ensure that they comply with this requirement by selecting engine sub-classes or configurations from those in the first tercile of production for the engine family, i.e., those in the top third by production volume. Also, an engine manufacturer may not modify or otherwise equip a vehicle tested in the in-use program with unique hardware or software that is not representative of normal engine production. This requirement also applies to Phase 2 testing, unless otherwise directed by EPA.

H. Use Must Be Representative of Vehicle Type

In Phase 1 testing, the usage of the prospective test vehicle must be representative of the typical usage for the vehicles' regular application or design. Stated differently, manufacturers must screen vehicles to ensure testing is conducted within the normal range of applications for that vehicle type, and avoid any extreme or highly unusual applications of a given vehicle. For example, a truck designed primarily to be an over-the-road freight hauler should be engaged in that activity rather than being used to move trailers around a freight terminal. This requirement is the same for Phase 2 testing, unless otherwise directed by EPA.

I. Normal Operator/Normal Route/Normal Operation

Phase 1 testing must be conducted with the vehicle's normal operator and without any special considerations regarding its route, driving style, atmospheric or environmental conditions, payload, schedule, etc. Similar conditions apply in Phase 2 testing unless EPA specifically directs otherwise. Therefore, engine manufacturers must ensure that a prospective vehicle will be tested as it is typically used during the shift day. These steps may include providing the owner/operator of the test vehicle with clear instructions (i.e., written and verbal) to load, drive, and otherwise operate the vehicle normally.

J. Proper Use and Owner/Operator Maintenance

Engine manufacturers should screen each prospective test vehicle to ensure that its key vehicle/engine systems (e.g., power train, drive train, and emission control systems) have been properly maintained and used. This includes a review of the vehicle's maintenance records and usage history. Any vehicle that fails this screening may be rejected from the test program and replaced with another candidate test vehicle. Conversely, once a vehicle is screened, accepted for testing, and the test initiated, the engine manufacturer accepts that the vehicle has been properly maintained and used.

Notwithstanding the foregoing, if post-testing inspection and analyses of a test vehicle reveal evidence of pre-existing engine or emission control system maintenance anomalies (e.g.,

improper repairs, tampering, or mal-maintenance such as internal modifications of the injector pump or fuel injectors, etc.), or improper fuel or fuel additive usage that could not reasonably have been identified prior to the initiation of testing, the engine manufacturer may exclude the vehicle from the in-use testing program after petitioning the Administrator for such relief. Any such petition must include the following. First, specific evidence of the engine or emission control system maintenance anomalies or misfueling that were discovered through post-testing inspection, including the details of all associated analyses or physical inspections. Second, a detailed explanation of why the problems could not have reasonably been discovered prior to the initiation of in-use testing. And, third, a detailed explanation of why the maintenance anomalies or misfueling constitute tampering or mal-maintenance sufficient to cause the engine's performance to be unrepresentative of a properly maintained and used engine.

A vehicle may be rejected for any of the following reasons:

1. **Misfueling.** Engine manufacturers should ensure that a prospective test vehicle has a history of using fuel or fuel additives that are consistent with the respective owner/operators manual and EPA regulations. More specifically, a vehicle may be considered misfueled and rejected from the program, at the engine manufacturer's discretion, if diesel fuel has been used or is present in the fuel tank upon inspection that does not conform to ASTM D975 specifications, including the applicable maximum specific fuel sulfur limits. A vehicle may not be rejected for using a fuel additive if fuel treatment is not prohibited in the engine's owner/operator manual and the fuel treatment is allowed under EPA regulations. The past use of biodiesel fuels is also not grounds for automatically rejecting a vehicle from the test program. Biodiesel-fueled vehicles are acceptable if they use a biodiesel fuel blend (e.g., biodiesel blends not in excess of B5) that is either expressly allowed or not otherwise indicated as an unacceptable fuel in the vehicle's owner/operator manual.

Any rejection based on a claim of misfueling must be carefully documented by the engine manufacturer. The rejection determination may be based on a review of the truck owner's or trucking company's operating instructions or other written refueling practices, fuel receipts, other documents, or interviews. It may also be based on fuel sample testing.

2. **MIL Illumination/Code Set.** Depending on the length of time that a malfunction indicator light (MIL) has been illuminated or a code has been set, or the extent of the necessary repairs, a manufacturer may reject a prospective test vehicle from further consideration. See Section V., Pre-Acceptance Maintenance and Vehicle Preparation, for further guidance on this aspect of the vehicle screening criteria.

3. **Scheduled Maintenance.** Manufacturers may reject a vehicle from the program for improper use and maintenance *without prior EPA approval or notification* if it can be shown that the vehicle *has exceeded* the manufacturer's recommended service intervals for certain critical emissions-related parts or systems plus an allowable grace period for the purposes of in-use testing. Similarly, manufacturers may reject a vehicle from the program, if in their engineering judgment, it has been improperly used or maintained even though the vehicle *has not reached or exceeded* the manufacturer's recommended service intervals for certain critical emissions-related parts or systems plus an allowable grace period for the purposes of in-use

testing. In this instance, however, the manufacturer *must notify* EPA before rejecting a vehicle for this reason. Finally, a vehicle can not be rejected without EPA approval for a failure to perform recommended maintenance for parts and systems not considered “emissions” related. See Section IV. L. for instructions on how to notify or seek the Agency’s approval for a vehicle rejection, as appropriate. The engine manufacturer must properly document each vehicle rejection that is related to improper use and maintenance.

Table 1 lists the maintenance items that EPA considers critical emissions-related parts or systems for the purposes of the in-use testing program. Again, no prior approval is needed for an engine manufacturer to reject a prospective test vehicle for these items when the manufacturer’s recommended service interval plus the allowable grace period is exceeded as shown in Table 1. However, EPA must be notified prior to rejecting a vehicle if it has not reached or exceeded the grace period for the items listed in the table. The Agency and the engine manufacturers will utilize the experience gained during the two-year pilot program to assess whether any grace period should be revised or eliminated to better facilitate the in-use testing program.

Table 1. Critical Emissions-Related Parts or Systems Typically Subject to Scheduled Maintenance

Scheduled Maintenance Item	Grace Period Limit After Recommended Maintenance Interval (Months or Miles)
Valve and Fuel Injector Lash	20 %
Crankcase Breather	20 %
Oil Change	20 %
Oil Filter Change	20 %
Air Filter Change	20 %
Fuel Filter Change	20 %
PM Trap and Trap Oxidizing Systems Including Related Components*	20 %
NOx Adsorber*	20 %
EGR Systems	20 %
Cooling System (including specified additives)	20 %
Exhaust Gas Sensors	20 %
Fuel-water separator cartridge or element	20 %
SCR systems including urea filter	20 %

* Adjustment and cleaning are generally allowed as a scheduled maintenance requirement, but repair or replacement is limited—see 40 CFR Part 86, Section 86.007-25.

4. **Unscheduled Maintenance.** Manufacturers may reject a vehicle from the in-use program if certain unscheduled, critical maintenance has not been performed as described in the owner/operator manual. These critical maintenance items are those that if neglected would likely: 1) cause permanent damage to the engine or emission control system; and 2) cause an emissions exceedance under the in-use testing program. Examples include very low engine oil (not readable on the dipstick), coolant levels that are low enough to raise concerns about

overheating in normal operation, or a dirty air cleaner element that has exceeded its maximum allowable air restriction as indicated by an air filter restriction indicator.

K. Major Repairs, Engine Rebuilds, Tampering, or Modifications

Engine manufacturers should screen each prospective test vehicle to ensure that its engine has not undergone tampering, major engine repairs or rebuilds, or other modifications that could reasonably be anticipated to make the engine dissimilar from its originally emissions-certified configuration.

Manufacturers must reject any prospective test vehicle if it displays any of the conditions listed below, unless those conditions are the result of an engine manufacturer-authorized or an EPA-approved field campaign, technical service bulletin with instructions to repair, or a product recall to announce the need for repair or replacement of engine or emission system components, and such repairs or replacements have been performed by a manufacturer's authorized repair facility, dealer or other representative:

1. Major Repairs or Engine Rebuilds

- Replacement engine, long block, or short block
- Piston/liner replacement
- Crankshaft replacement
- Camshaft replacement
- Cylinder head gasket replacement
- Any repair that requires removal of the cylinder head

2. Tampering or Unapproved Modifications³

- Unapproved fuel injector modification
- Unapproved fuel injectors
- Unapproved fuel pump
- Unapproved turbocharger
- Unapproved charge air cooler
- Unapproved engine calibrations
- Unapproved electronic sensors (including engine control sensors) or actuators
- Tamperproof seals removed
- Unapproved removal or modification of exhaust after treatment devices

³ Tampering is the removal or rendering inoperative of any device or element of design installed on or in a motor vehicle or motor vehicle engine for purposes of emission control. Unapproved modifications are hardware or software changes that result in an engine that is not similar in all material respects to the originally certified engine, or can not be determined to be similar (i.e. the equivalency of the parts can not be ascertained). In many cases the use of unapproved modifications constitutes tampering. Components supplied by an aftermarket (non-OEM) supplier that are not specifically approved by the engine manufacturer and which could reasonably be expected to affect emissions (e.g., injectors, turbocharger, intercooler, EGR valve, EGR valve cooler) are considered "unapproved." Components which cannot reasonably be expected to affect emissions (e.g., air filter element, coolant hoses, turbocharger compressor hose, clamps) are not considered "unapproved."

- Unapproved aftermarket devices designed to alter horsepower, fuel economy, or engine performance/emissions parameters
- Unapproved or unauthorized modification to a vehicle's configuration that does not comply with the engine manufacturer's written specifications (e.g. transmission, rear axle, charge-air cooler or cooler system, inlet or exhaust system, or plumbing or connections)

L. Required EPA Notification or Approval Before Vehicle Rejection

The engine manufacturer must notify or consult, as appropriate, with EPA before rejecting any candidate vehicle for reasons *other than* described in paragraphs A through K of this section. Also, as described in Section IV. J. 3., the manufacturer must notify or seek EPA's approval before rejecting a vehicle for improper use or maintenance based on scheduled maintenance requirements. The Agency may be contacted by emailing Mr. Larry Oeler at the following email address: oeler.larry@epa.gov. Alternatively, for a more immediate consultation an engine manufacturer may call the heavy-duty in-use testing program contact person at 202-343-9289.

V. Pre-Acceptance Maintenance and Vehicle Preparation

Prospective test vehicles that pass the pre-acceptance screening process outlined above may undergo certain maintenance and preparation prior to being accepted into the test program and being fully instrumented with portable measurement devices.

A. General Maintenance

Maintenance must be limited to what is described in the owner/operator manual for engines with the corresponding amount of service and age. This may include adjustment, cleaning, repair, or replacement using manufacturer approved parts or materials meeting manufacturer specifications (when identified in the owner/operator manual). Examples of general maintenance items are shown below:

- Replenish or replace lubricating oil
- Change oil filter
- Replenish or replace coolant level or additives
- Replace air cleaner element
- Tighten hose, tubing, or pipe clamps
- Replace or refasten missing or unfastened hose or wire harness clips
- Tighten fluid line connections
- Clean radiator exterior
- Adjust drive belt tension
- Adjust tire inflation
- Other repairs or adjustments that are consistent with the truck or engine manufacturer's recommendations as specified in the owner/operator manual and are appropriate for the current vehicle mileage to ensure safe and reliable operation during in-use testing.

B. MIL Indicated Repairs

Any maintenance based on illuminated MIL warning lights or stop lights or set trouble codes will be allowed only if the MIL or code is consistent with proper maintenance and use. Specifically, if a vehicle is received into the program with a MIL that has been illuminated or a trouble code set for a period of less than or equal to 12 engine hours, it is considered to be consistent with proper maintenance and use, and the vehicle may be tested as received or repaired prior to testing.

If the vehicle is tested as received, the engine manufacturer accepts that the vehicle is properly maintained and used. Accordingly, and except as otherwise provided in Section IV. J. above, the manufacturer cannot subsequently claim that the test results are invalid because the vehicle should actually have been repaired prior to testing. Similarly, once a repair is made, the MIL and or trouble code is no longer set, and an emissions test is initiated, the manufacturer may not subsequently reject the vehicle from the program or otherwise invalidate the test results by claiming that the repair was improper, incomplete, or otherwise deficient. Finally, if repairs are elected, but ultimately it is determined that the required service can not be completed in a timely manner, the vehicle may be rejected from the test program and replaced by another prospective test vehicle.

In rare instances, operating a vehicle with a MIL or trouble code for a period less than 12 engine hours may result in permanent damage to the engine or emission control system if service to correct or remedy the condition is significantly delayed from the onset of the MIL or code. If a manufacturer makes such a determination, the vehicle may be rejected from the test program and replaced by another vehicle. However, in this instance the engine manufacturer must notify EPA before rejecting the vehicle. See Section IV. L. for contact information.

If a vehicle is received into the program and a MIL has been illuminated or a trouble code set for a period greater than 12 engine hours, it is considered to be inconsistent with proper maintenance and use. In this case, the manufacturer has three options. First, test the vehicle as received. Second, repair the vehicle before testing. Third, reject the vehicle from the test program and replace it with another vehicle.

As previously described, if the vehicle is tested as received, the engine manufacturer accepts that the vehicle is properly maintained and used. Accordingly, and except as otherwise provided in Section IV. J. above, the manufacturer can not subsequently claim that the test results are invalid because the vehicle actually should have been repaired prior to testing. Similarly, once a repair is made, the MIL and or trouble code is no longer set, and an emissions test is initiated, the manufacturer may not subsequently reject the vehicle from the program or otherwise invalidate the test results by claiming that the repair was improper, incomplete, or otherwise deficient. Finally, if repairs are elected, but ultimately it is determined that the required service can not be completed in a timely manner, the vehicle may be rejected from the test program and replaced by another prospective test vehicle.

C. Adjustable Parameters

For anything EPA defines as an “adjustable parameter” (see 40 CFR Part 86, Sections 86.094-21(b)(1)(ii) and 86.94-22(e)), the parameter may be adjusted only if it is outside of its allowable range. The parameter may be either adjusted to the mid-point of its adjustable range or to the engine manufacturer’s recommended setting. No exceptions to the above are allowed without EPA’s approval. Manufacturers must obtain EPA approval prior to adjusting any parameter not considered to be an adjustable parameter.

D. Fuel Tank Drain and Refill

At the engine manufacturer’s discretion, a prospective test vehicle’s fuel tank(s) may be drained and refilled with diesel fuel conforming to ASTM D 975 specifications for No. 2-D S500 or No. 2D S15, as required in the calendar year that the in-use testing occurs. Also, any biodiesel fuel blend may be used that is either expressly allowed or that is not otherwise indicated as an unacceptable fuel in the owner/operator manual, or in the engine manufacturer’s published fuel recommendations.

Any fuel that is added to the fuel tank of a prospective test vehicle must be purchased at a local retail establishment near the site of vehicle procurement or screening, or along the test route. Alternatively, the fuel may be drawn from a central fueling source, provided that the fuel used is representative of that which is commercially available in the area where the vehicle is operated.

In general, no post-refinery fuel additives are allowed. However, one or more specific fuel additives may be used during in-use testing if you can document that the owner/operator of the prospective test vehicle has a history of normally using the fuel additive(s), it is an EPA registered fuel additive, and it is not prohibited in the vehicle’s owner/operator manual or in the engine manufacturer’s published fuel-additive recommendations. An example of an allowable additive meeting the above criteria may be product that is added to the fuel for cold temperature operation.

E. Onboard Diagnostics (OBD) System History

The engine manufacturer must document the history of the test vehicle’s OBD system and any actions the owner/operator took to address OBD trouble codes or MIL illumination over the vehicle’s lifetime or the period for which this information is available.

VI. After Test Initiation - Allowable Maintenance

A. General Maintenance

Repairs or service may be performed during the test if they are consistent with Section V. A., General Maintenance.

B. MIL Indicated Repairs

If a MIL is illuminated or a trouble code is set during an in-use test *prior to accumulating three hours of non-idle operation*, the engine manufacturer has two basic options. First, stop the test, repair the vehicle, and resume testing. In this case, only the portion of the full test results without the MIL illuminated or trouble code set would be used in the pass/fail determination. Second, stop the test, repair the vehicle, and initiate a new test. In this case, only the post-repair test results would be used in the pass/fail determination. However, if the requisite repairs ultimately could not be completed in a timely manner, the manufacturer may reject the vehicle from the test program and replace it with another vehicle.

If a MIL is illuminated or a trouble code is set during an in-use test *after accumulating three or more hours of non-idle operation*, the engine manufacturer has three basic options. First, stop the test, repair the vehicle, and resume testing. Second stop the test, repair the vehicle, and initiate a new test. Third, stop the test and use the accumulated test results in the pass/fail determination.

VII. After Test Initiation - Test Quality Control and Validity

Manufacturers are responsible for ensuring that test data submitted to EPA meets the Field Testing and Portable Emissions Measurement Systems requirements outlined in 40 CFR 1065 Subpart J. All test results received by EPA will be considered valid, regardless of the test emission levels of regulated pollutants. Failing emissions results will not be considered a legitimate cause to question test validity. In particular, and except as otherwise provided in Section IV. J. above, any maintenance or engine operation issue identified after the test will not be considered a legitimate reason for invalidating a test, and the maintenance state of test vehicles will be considered to be representative of those in the properly maintained and used in-use vehicle fleet.

APPENDIX 1

Sample Vehicle Recruitment Form Letter

Dear Vehicle Owner:

In a program developed jointly with the manufacturers of heavy-duty diesel engines, we require each manufacturer to conduct an in-use testing program to monitor the emissions performance of their products. This important program is designed to ensure that these engines continue to operate properly while in actual use. The engine manufacturer has contacted you because your vehicle generally fits our current selection criteria. If you participate in the program, the manufacturer's representative will further screen your vehicle to see if it is eligible to be tested. If it is, the manufacturer will arrange to outfit your vehicle with a portable emissions monitoring device. We would greatly appreciate your assistance in this matter because it will help all of us ensure healthy air and a clean environment.

We also want to assure you that the results of this program are meant only to monitor the emissions performance of the engine in your vehicle. You will not be held accountable for the emissions performance or condition of the engine in any way by participating in this program.

If you have any questions regarding the legitimacy or other aspects of this program, please contact Mr. Larry Oeler of my staff at 202-343-9289 or oeler.larry@epa.gov.

Sincerely,

(Signed)

Karl Simon, Acting Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality