

EPA Highway Heavy-duty Engine & Vehicle Test Procedure and other Amendments

*Notice of Proposed Rulemaking Overview for NACAA Mobile Source &
Fuels Committee*

May 26, 2020

US EPA Office of Transportation and Qir Quality

Overview

- NPRM published May 12, 2020 (85 FR 28140)
 - Comments due June 26, 2020
 - No hearing requested
 - For more info: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/improvements-heavy-duty-engine-and-vehicle-test>
- OTAQ has worked with manufacturers and others to identify and resolve:
 - Test procedure issues
 - Implementation issues related to model year 2021 Phase 2 standards
- We have also identified other technical amendments needed to our highway and nonroad regulations
- Rulemaking has limited scope
 - Amendments would not impact emissions or increase costs

Heavy-Duty Highway Test Procedures

- Numerous amendments
- Minor - but very important to manufacturers

Amendments	Examples
Increase Flexibility	<ul style="list-style-type: none">• Add option to measure torque-converter K-factor• Expand option for powertrain testing
Improve Accuracy and Repeatability	<ul style="list-style-type: none">• Revise provisions to correct test results for fuel properties• Add carbon balance criteria• Improved engine and powertrain preconditioning and test order
Add Clarity	<ul style="list-style-type: none">• Provide additional instructions for testing engines and powertrains• Provide additional clarity to how confirmatory tests will be performed
Correct Minor Errors	<ul style="list-style-type: none">• Correct equations that were not properly published in the CFR

Heavy-Duty Greenhouse Gas Emission Model (GEM)

- Full-vehicle simulation model developed by OTAQ – used by OEMs to demonstrate compliance with EPA Phase 1 and Phase 2 GHG standards, NHTSA fuel efficiency standards
- 2016 Final Rule version (GEM P2V3.0) needs several minor amendments
- Will release updated draft version with NPRM (GEM P2V3.5)

Amendments	Examples
Increase Flexibility	<ul style="list-style-type: none">• Allow manufacturers to input measured torque-converter K-factors• Allow manufacturers to input engine idle speeds at the vehicle input level• Revise software to address vehicles for export to Canada• Allow for credit when using multiple idle controls
Improve Accuracy and Repeatability	<ul style="list-style-type: none">• Revise interpolation algorithms for points close to the torque curve• Revise default engine for powertrain testing
Correct Minor Errors	<ul style="list-style-type: none">• Correct adjustment factors that were transposed for school buses and coach buses• Correct treatment of idle emissions

Proposal to Add Highway Phase 2 Compliance Flexibility

- Remove restriction on the use of certain engine credits
- Provide additional flexibility for manufacturer testing of production and in-use vehicles
- Interim approach to address measurement variability
- Revise “model year” definition to correct Phase 2 text that inadvertently disallows manufacturers starting their model year before January 1
- Add reg text to facilitate certification of Canadian heavy-haul tractors
 - OEMs currently certify with EPA for Canadian engine and vehicle standards
- Considering additional flexibility for engines used in vocational vehicles (such as garbage trucks, delivery vehicles, etc.)
 - Alternate phase-in
 - Extended credit life

Other Amendments - Obsolete Text

- Original nonroad regulations followed traditional highway structure
 - Nonroad engine standards for land-based nonroad diesel engines in 40 CFR part 89 in 1994
 - Four additional sectors by 1999
- In 2002, OTAQ established standards in a new area – 40 CFR parts 1000 – 1099
 - Plain language regulations, more space for improved organization
 - We have migrated regulations from the five old parts (“legacy”) to the new parts (“plain-language” or “millennial”)
- Continued publication of these five obsolete parts in the CFR creates confusion for the regulated industry – especially new entrants and small businesses

Old OTAQ Regulations	New OTAQ Regulations
Title 40	Title 40
Chapter I	Chapter I
Subchapter C	Subchapter U
Parts 85-97	Parts 1000-1099

	Old Part	New Part
Nonroad Diesel	89	1039
Small SI	90	1054
Marine SI	91	1045
Locomotives	92	1033
Marine Diesel	94	1042

Removing Obsolete Text, continued

- Proposed amendments would remove the five legacy parts
 - They have been obsolete for a few years
 - EPA's CFR footprint will decrease by 600+ pages
 - Each legacy part will have a short section to describe the regulatory history and steer people to the new parts for any issues for new and old engines
- We also need to amend several regulatory references to avoid dead-end cites (including stationary program)
- Other obsolete text also being removed
 - Urban bus rebuilds, altitude compensation requirements, old test procedures, expired phase-in provisions, etc.

E10 Testing for Gasoline-Fueled Nonroad Engines (Spark-Ignition)

- Starting in 2020, manufacturers must test gasoline-fueled engines with E10 test fuel for California
 - With no EPA rule change, manufacturers would need to start performing separate tests for California and EPA
- Proposed amendments would allow use of E10 fuel for EPA certification
 - Important issue for Marine SI, all-terrain vehicles, and off-highway motorcycles

Other Amendments

- Updating heavy-duty OBD regulations to:
 - Reflect current ARB practices
 - Facilitate certification of Canadian vehicles
- Replacement engine exemption for marine diesel engines
 - For vessels that become “new” based on extensive modifications, EPA may approve an exemption from Tier 4, but never less than Tier 3
 - Streamline notification requirement for annual composite submission, rather than piecemeal reporting throughout the year
- Updating description and instructions for certification fees for all highway and nonroad sectors (no change in fee formulas or values)
- Various corrections, clarifications, and improvements will address minor implementation concerns and harmonize regulatory text across sectors