

Recommendations Regarding Certain Elements of the draft Off-cycle Emissions GTR

United States

Environmental Protection Agency

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Issues

- Review of Engine Manufacturers Association January 2005 Presentation
- OICA proposal for new steady-state testing
- Fundamental Elements of WNTE
- Suggested revisions to OCE GTR

Review of EMA January 2005 Doc.

- OCE WNTE comments (pg. 8 of EMA doc.):
 - Draft GTR contains no guidance regarding information on which WNTE Compliance Statement is based
 - In-use compliance testing inferred but not explicitly required

OICA Proposal for new laboratory-based WNTE test data

- Pg. 17 of OCE GTR working document No. 8
 - Minimum of 20 steady-state testing points
 - Proposed by manuf., approved by certification/type approval authority
 - Testing at standard laboratory conditions
 - 5 modes w/ highest emissions selected for additional testing
 - Testing at “worst-case” conditions (e.g., high inlet air temperature)

Fundamental Elements of WNTE

- ❑ WNTE should include a defined speed and load region of the engine map, the “WNTE control area”.
- ❑ WNTE should not be based on a predefined duty cycle or specific test point
- ❑ WNTE should include a defined set of ambient temperature and altitude conditions during which the WNTE applies.
- ❑ Emissions which occur during reasonable vehicle driving patterns for which operation falls within the speed, load, and ambient operation are eligible to be compared to the WNTE limits, subject to the other constraints defined in the OCE GTR.

Fundamental Elements of WNTE

- ❑ OCE GTR should include a WNTE Compliance Statement which the manufacturer can attest to at the time of type-approval/certification
- ❑ WNTE should allow the individual country or regional authorities the discretion to examine the basis of the Compliance Statement and make a determination on whether or not to accept the engine or vehicle as compliant with the WNTE.
- ❑ While the WNTE will not define enforcement provisions, it should allow individual countries and regional authorities the opportunity to develop enforcement provisions which can rely on WNTE data collected on in-use engines and vehicles as well as laboratory based testing of engines and vehicles.

Suggested changes to GTR in response to EMA & OICA comments

- Suggested edits to WNTE Compliance Statement clarifying manufacturers basis for statement
- Current draft of GTR is explicit regarding the use of in-use, on-vehicle testing for determining compliance with WNTE
- Suggested language which provides guidance to manufacturers regarding the type of data which could form the basis for the WNTE Compliance Statement

Suggested Revisions to OCE GTR – WNTE Compliance Statement

- *WNTE Compliance Statement in draft GTR (OCE Working Doc. 8)*
 - *"These engines will comply with the WNTE limits specified in Section 5.1 when operated under all conditions which may reasonably be encountered in normal vehicle operation and use."*

Suggested Revisions to OCE GTR – WNTE Compliance Statement

- *Suggested new WNTE Compliance Statement for Section B.11.1:*
 - *"(Name of manufacturer) attests that the engines within this engine family comply with the applicable WNTE emission limits when operating under all conditions which may reasonably be encountered in normal vehicle operation and use, and which are subject to the requirements of the OCE regulation. (Name of manufacturer) makes this statement in good faith, after having performed an appropriate engineering evaluation of the engines emissions performance over a wide range of operating and ambient conditions of all the information relied upon as the basis for this statement."*

Suggested Changes to OCE GTR – Guidance regarding basis of WNTÉ Compliance Statement

- *Suggested new language for Section A.3. of the GTR regarding the basis for the WNTÉ Compliance Statement:*
 - *“The basis for the WNTÉ Compliance Statement shall be determined by the engine or vehicle manufacturer, and could rely on data, engineering analysis, and other information sufficient for the manufacturer to have the confidence necessary to ensure compliance with the WNTÉ portions of the OCE GTR are met. As an example, the basis for the Compliance Statement could include WHTC data, WHSC data, a robust engine emissions map derived from laboratory testing (e.g., an emissions map of similar resolution to the engine’s base fuel injection timing map) and technical analyses relying on good engineering judgment which are sufficient, in combination, to project emissions levels under the conditions covered by the WNTÉ. Data generated from in-use highway vehicle testing could also be part of this combination, or depending upon the extent of the in-use data, it could be the primary basis for the Compliance Statement.”*