

22 October 2008

Draft Minutes of the NRMM WG Editorial Committee Meeting

Ispira, 29 September - 1 October 2008

Following members of the editorial committee attended the meeting:

(G. De Santi, EC, Chairman NRMM WG)

R. Hummel, EC, Chairman of Meeting

G. Billi, Secretary NRMM WG

G. Cornetti

M. Shikata, LEMA Japan

J. Rostkowski, Environment Canada

C. Jackson, US EPA

M. Lindgren, SRA Sweden

S. Shimpi, Cummins, EMA

H.-W. Knuth, Deutz, EUROMOT

A. Stark, FPT, EUROMOT

M. Ericsson, Scania, EUROMOT

R. Hummel welcomed the participants and repeated the objective of this meeting, which was to complete the review of the gtr draft in order to present it as informal document to the GRPE meeting in January 2009. He also thanked all the experts for their very active and constructive contributions to the drafting work during the months before the September 2008 meeting.

The draft agenda (Enclosure 1) was reviewed and adopted.

R. Hummel informed the experts about the results from the June GRPE and WP.29/AC.3 meetings. At both meetings the commitment by the NRMM working group, to present the complete gtr as informal document, had been welcomed. He also reported that the NRMM WG had been asked by the chairman of GRPE to plan the NRMM WG meeting of January 13th, 2009.

Status reports for national NRMM regulations were given by:

- M. Shikata, (Enclosure 2) presented the Japanese study to introduce the NRMM gtr into Technical Regulation in Japan (Special Vehicle Legislation). He highlighted 6 big issues which had been identified by the Japanese working group:
 - o *Definition of NRMM*
 - o *Applicable test duty cycle*
 - o *Ratio of hot start and cold start*
 - o *Hot and cold soak*
 - o *Engine family and Parent engine selection*

○ *Regeneration*

- C. Jackson updated the experts on the new SI Rule (final SI rule 4 September 2008). (Enclosure 3). He informed that the final HD OBD rule will be published by the end of the year and that a proposal for non-road OBD is in preparation. Due to the larger number of families EPA is considering strategies to reduce the required test burden for the nonroad in-use program being developed.
- S. Shimpi informed the experts on further modifications of 1065. He contributed a file about multi stack engines. (Enclosure 6)

G. Cornetti reported on the NRMM drafting work done since April 2008 and about the content of the new version, which had been distributed prior to the meeting.

Chapter 8 and 9 were reviewed starting from chapter 8.1.11. Newly inserted (e.g. latest developments of 1065) or modified sections and remaining issues were presented and discussed. Most of them were positively decided.

The editorial committee confirmed to have separate annexes A.8 and A.9 for mass-based and molar-based emission calculations, the use of the original symbols and the inclusion of a conversion table at the beginning of A.8 and A.9. To optimize the available meeting time, the calculation annexes will be evaluated with the respective experts only.

The following list indicates items which need to be followed up or tasks for experts, agreed during the meeting. All answers shall be given before end October to be included into the working document to be sent out for the November meeting.

Tasks:

1. C. Jackson will send definition for 'good engineering practice', which will be included in the gtr
2. Table of internationally recognised traceable standards will be collected and included. G. Cornetti will send an email asking for the relevant input.
3. M. Shikata will send the corrected version for Enclosure 2
4. The discussion about the requirement for oxygen interference, specifically if the requirement should include the permitted variability for the gases or not, has been left open. The practice of renaming the gas bottles will be sent by C. Jackson to the editorial committee experts. (It will explain the procedure of renaming when 2 gas bottles are used). If agreed by the editorial committee this procedure could be included in the gtr draft. Otherwise the requirement shall include the gases variability.
5. C. Jackson asked R. Hummel to check if it is possible to make a reference to guidelines in the legal text
6. 8.1.11.1.4. CO₂ quench verification procedure (S. Shimpi will check, why zero gas is used instead of CO₂, why the port is changed in section (h), and if it is really useful to span the NDIR with twice the maximum CO₂ concentration(i)?)
7. 8.1.11.1.5. H₂O quench verification procedure; S. Shimpi will check (g).

8. 8.1.11.3.4. Procedure (NDUV analyzer HC and H₂O interference verification) S. Shimpi will give equation and example.
9. 9.3.2.3.1. "Sample dryers" split in two sub-paragraphs: 9.3.2.3.1.1. "Requirements" and 9.3.2.3.1.2. "Type of sample dryers allowed and procedure to estimate moisture content after the dryer." G. Cornetti to check compatibility of requirements in this section with the rest of 9.3.2.3.
10. C. Jackson / M. Shikata will kindly supply figures (as 7.1, 8.1 and 9.2) in editable format.
11. 9.3.2.3.3. Ammonia Scrubber; S. Shimpi and C. Jackson will send communication on requirements by end of October. Editorial Committee will decide if chapter will be included.
12. Filter material specification of paragraph 9.3.3.4., check in November on WHDC proposal
13. Table 9.2. G. Cornetti will correct references in first column
14. 6.6.2. Infrequent (periodic) regeneration, To be checked by G. Cornetti if: the outcome based on NRTC can be extended to RMC test, and if the methodology has been applied / verified for discrete mode steady-state tests.
15. Test cycles: M. Shikata proposed a new formulation (see Appendix) for chapter 7.4. As his proposal was not discussed by all experts they are asked to check it. Given that the power range of applicability of the test cycles is very much linked to the emission limits, it has been proposed to not include a power range until when the emission limits will be introduced into this gtr.
16. adjust flow charts
17. 9.2.1.1. The possibility to comply with the dilution air temperature between 293 and 303 K (20 and 30 °C) in presence of a diluted gas temperature at the filter between 42 and 52 °C is under examination by US EPA and EMA. Waiting for further information from USA, for the moment the gtr remains with a dilution air temperature for particulate sampling of ≥ 288 K (15 °C) as stated in WHDC paragraph §8.3.3.1.
18. Include symbol conversion table in annex A.8 and A.9. C. Jackson made a first table of the symbol comparison available. (Enclosure 5)

The work progressed well and at the end of the meeting all of the chapters 8 and 9 had been reviewed and also other questions had been successfully discussed. (Enclosure 4,5)

The chairman explained the timeline to arrive at the informal GRPE document at the January 2009 meeting.

- 15 January 2009: presentation of gtr to GRPE
 - end December 2008: submission of gtr draft as informal document to GRPE
 - 19 – 21 November Meeting of editorial committee in Ispra to consolidate the gtr text
- This means that important work has to be done before the November meeting in order to allow the completion of the consolidation work during the November meeting.

It was decided that, after updating, a clean version of the legal text and a version with the references will be circulated to the experts by mid October. The experts will review the

document and will feed back all comments to R. Hummel, who in turn will share the emails with the experts of the editorial committee. Where possible (e.g. errors and editorial corrections), the corrections will already be implemented before the November meeting. Aim is to arrive at the November meeting with a updated clean working document, apart from discussion pointers placed by G. Cornetti, according to the comments received.

The chairman informed the experts that in November 2008 during the GEME meeting and thus prior to the GRPE meeting, the European Member States will be informed about the status of the gr work, circulating also a clean version of the legal text. The editorial committee agreed.

EPA suggested holding a conference call in October with all members of the editorial committee. This proposal was welcomed by M. Shikata.

In a final round table the experts showed confidence about the progress achieved and that the editorial committee will be able to consolidate the work in November.

Appendix – M. Shikata proposed change of paragraph 7.4 “Test cycles”

The following duty cycles apply:

~~(a) for variable speed engines with a maximum power below 37 kW, the C1 cycle or the corresponding ramped modal cycle, as specified in Annex §A.1.;~~

(a) ~~(b)~~ for variable-speed engines with a maximum power at or above 37 kW, the C1 cycle or the corresponding ramped modal cycle, and the transient cycle NRTC as specified in Annex §A.1.;

(b) ~~(c)~~ for constant-speed engines, the D2 cycle or the corresponding ramped modal cycle as specified in Annex §A.1.

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- Enclosure¹:
1. Adopted agenda
 2. Japanese study to introduce NRMM gtr into Technical Regulation in Japan
 3. Update 1065 with red-strike out for ease of reading
 4. Working document 1 Oct 2008
 5. Accepted updated 9.3.2.3 Sample-conditioning components
 6. Table of symbol comparison
 7. Multi stack engines; EMA proposal for 1065
 8. Dilution air temperature
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26 September 2008

Agenda, Editorial Committee Meeting of NRMM WG
29 September – 1 October 2008
JRC Ispra, Italy
(Chairman: Giovanni De Santi / Rudolf Hummel Secretary: Giorgio Billi)

1. Welcome to Ispra and organizational Details
2. Adoption of Draft Agenda
3. Update from GRPE and WP.29 Meeting in June 2008
4. Update of legislative developments
 - Japan: Introduction of GTR into Japanese special Vehicle Regulation
 - USA: Latest developments of 1065
 - European Commission: Review of Non-road Directive and GTR
5. **Presentation and review of NRMM gtr draft**

Draft includes comments from April 2008 and June 2008 meetings, important recent changes to 1065, contributions by NRMM experts during summer 2008

 - 5.1 Structure and content of new version
 - 5.2 Work done since April 2008 meeting
 - 5.3 Review chapter 8 starting at 8.1.11
 - 5.4 Review chapter 9 (some parts of 9 already discussed)
 - 5.5 Discuss marked text in the draft
 - 5.6 Calculation annexes and symbols
6. Consolidation of draft text and next actions
7. January GRPE meeting (Timeline and actions for completing informal document)
8. Upcoming meetings:
 - Editorial committee meeting Ispra 19 – 21 November 2008
 - Preparation of NRMM meeting in Geneva January 2009
9. Other issues

¹ As all enclosures have been distributed at the end of the meeting in electronic form, they are not included in this document. Please write to the secretary if you need an electronic copy of a document.