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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Pollution and Energy (GRPE)

**REPORT OF THE WORKING PARTY ON POLLUTION AND ENERGY (GRPE)  
ON ITS FIFTY-SECOND SESSION 1/  
(Geneva, 6 – 9 June 2006)**

**ATTENDANCE**

1. GRPE held its fifty-second session from 6 to 9 June 2006, under the chairmanship of Mr. B. Gauvin (France). Experts from the following countries participated in the work following Rule 1(a) of the Rules of Procedure of WP.29 (TRANS/WP.29/690): Belgium; Canada; Czech Republic; France; Germany; Hungary; India; Italy; Japan; Netherlands; Norway; Poland; Republic of Korea; Republic of South Africa; Russian Federation; Serbia; Spain; Sweden; Switzerland; Turkey; United Kingdom; United States of America. Experts from the European Commission (EC) also participated. Experts from the following non-governmental organizations took part in the session: International Organization for Standardization (ISO); International Organization of Motor Vehicle Manufacturers (OICA); European Association of Automobile Suppliers (CLEPA); International Motorcycle Manufacturers Association (IMMA); European Natural Gas Vehicle Association (ENGVA); European LPG Association (AEGPL); Association for Emission Control by Catalyst (AECC/CEFIC); Engine Manufacturers Association (EMA); European Association of Internal Combustion Engine Manufacturers (EUROMOT); European Committee of Associations of Manufacturers of Agricultural Machinery (CEMA); International Association of Natural Gas Vehicles (IANGV); International Motor Vehicle Inspection Committee (CITA); Additives Technical Committee (ATC/CEFIC).

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1/ Following the agreement reached at the fifty-first GRPE session, four informal meetings were held prior to the proper session of the fifty-second GRPE (see ECE/TRANS/WP.29/GRPE/2006/10, and paras. 2 to 5 below). The informal meeting on Particulate Measurement Programme (PMP), initially scheduled to be held on 9 June 2006, was cancelled.

2. The thirteenth informal meeting of the GRPE working group on the emissions from Non-Road Mobile Machinery (NRMM) was held on 6 June 2006 (morning only) under the Chairmanship of Mr. G. De Santi (European Commission). A summary of the proceedings of this informal meeting is given below (paras. 26 and 27).

3. The fourteenth informal meeting of the GRPE working group on Off-Cycle Emissions (OCE), was held on 6 June 2006 (afternoon only), under the Chairmanship of Mr. W. Charmley (United States of America). A summary of the proceedings of this informal meeting is given below (paras. 9 and 10).

4. The nineteenth informal meeting of the GRPE working group on the Worldwide harmonized Heavy-Duty Certification procedure (WHDC) was held on 7 June 2006 (morning only) under the Chairmanship of Mr. J.P. Laguna (European Commission). A summary of the proceedings of this informal meeting is given below (paras. 6-8).

5. The seventeenth informal meeting of the GRPE working group on World-Wide harmonized Heavy-duty vehicle On-Board Diagnostics (WWH-OBD) was held on 7 June 2006 (afternoon only), under the chairmanship of Mr. K. Narusawa (Japan). A summary of the proceedings of this informal meeting is given below (paras. 11-16).

1. REGULATION No. 49 (Emissions of C.I. and P.I. (NG and LPG) engines)

1.1. Worldwide harmonized Heavy-Duty Certification procedure (WHDC)

Documentation: ECE/TRANS/WP.29/GRPE/2006/17; ECE/TRANS/WP.29/GRPE/2006/18; informal documents Nos. GRPE-52-3 and GRPE-52-14 of Annex 1 to this report.

6. GRPE noted the progress report (GRPE-52-3) of the WHDC working group following its eighteenth meeting (held in Brussels, on 28 February 2006). Mr. J.P. Laguna (EC), chairing the WHDC working group, reported on the results (GRPE-52-14) of the informal meeting prior to the GRPE session (para. 4 above). He informed GRPE that the text of the WHDC procedure (ECE/TRANS/WP.29/GRPE/2006/17) was finalized by the group and added that some issues still remained open. GRPE considered the document and agreed with the amendments reproduced in Annex 2 to this report.

7. GRPE adopted ECE/TRANS/WP.29/GRPE/2006/17, as amended, and agreed to leave the three remaining issues (hot soak period, cold start weighting factor, particulate measurement filter material and size) in the draft gtr as options for the Contracting Parties, subject to further consideration and decision by WP.29 and AC.3. GRPE also noted and adopted the report ECE/TRANS/WP.29/GRPE/2006/18, tabled by the EC, on the development of the WHDC gtr.

8. GRPE acknowledged the important work done by the WHDC working group. The secretariat was requested to submit both documents to WP.29 and AC.3, for consideration and vote at their November 2006 sessions, as draft gtr on WHDC and its final report (see also para. 14).

1.2. Off-Cycle Emissions (OCE)

Documentation: Informal documents Nos. GRPE-52-1, GRPE-52-2, GRPE-52-7 and GRPE-52-15 of Annex 1 to this report.

9. The Chairman of the OCE working group, Mr. W. Charmley (United States of America), informed GRPE about the progress of work made by the group during the last meetings held in Chicago, Geneva and The Hague (GRPE-52-1, GRPE-52-2 and GRPE-52-7). He reported that, after the conclusion of the informal meeting held prior to the proper GRPE session (para. 3 above), some key issues (GRPE-52-15) still needed to be addressed by the working group at a further meeting.

10. GRPE noted the OCE working group's intention to meet again in the United States of America, on 10-12 October 2006. The location was not yet determined. Details would be circulated to the group members as soon as available. GRPE agreed that the OCE working group should also meet in Geneva, prior to the next GRPE session in January 2007 (para. 51 below).

1.3. World-Wide Harmonized Heavy-Duty OBD group (WWH-OBD)

Documentation: ECE/TRANS/WP.29/GRPE/2006/8/Rev.1;  
ECE/TRANS/WP.29/GRPE/2006/19; informal documents Nos. GRPE-52-12 and GRPE-52-16 of Annex 1 to this report.

11. GRPE noted the ongoing work regarding the implementation of the WWH-OBD communication requirements (GRPE-52-12) and was informed that the ISO standard had been finalized. By the end of June 2006, the ISO Committee would submit the new standard for voting and, after its adoption, it could be published in August 2006, as ISO/PAS 27145 - 1 to 4. Mr. K. Narusawa (Japan), chairing the WWH-OBD working group, reported on the final results of the group's meeting prior to the GRPE session (para. 5 above). He informed GRPE about the group's proposal to solve the remaining open issues (GRPE-52-16). With regard to the communication protocol, GRPE agreed with the working group's suggestion to proceed in a two-step approach. As a first step, the specifications would be limited to the controller area network (CAN) based wired communication (The ISO documents would be released as Public Available Specifications (PAS) and the standard SAE J1939 would be amended to meet the WWH-OBD provisions). The Ethernet based wired communication would be inserted at a later time point and the ISO would have to be aligned to include requirements for the external test equipment.

12. Referring to the revised gtr on WWH-OBD (ECE/TRANS/WP.29/GRPE/2006/8/Rev.1), the EC expert requested to re-insert a paragraph regarding the transposition period, specifying that Contracting Parties were not required to submit the gtr to their national or regional adoption process earlier than three years after its establishment in the registry. As such a paragraph would not be in line with the provisions of articles 7.1. and 7.4. of the 1998 Agreement, the secretariat preferred not to insert that paragraph into the gtr, but into the report of WP.29 and AC.3.

13. GRPE agreed to re-insert the text as paragraph 3. of part B, but in square bracket, and to leave the final decision on this issue with WP.29 and AC.3. In this respect, GRPE adopted

ECE/TRANS/WP.29/GRPE/2006/8/Rev.1 with the amendments reproduced in Annex 3 to this report.

14. As the gtr on WWH-OBD and WHDC were closely linked, GRPE agreed with the suggestion by the expert from OICA to insert, in case of confirmation by WP.29 and AC.3, the same paragraph 3. into the gtr on WHDC (i.e. ECE/TRANS/WP.29/GRPE/2006/17).

15. GRPE considered and adopted the final report on the development of the gtr on WWH-OBD (ECE/TRANS/WP.29/GRPE/2006/19), tabled by the United States of America. The GRPE Chairman thanked the technical sponsor and the working group for the work done. The secretariat was requested to submit both documents to WP.29 and AC.3, for consideration at their November 2006 sessions, as draft gtr on WWH-OBD and its final report.

16. With regard to the gtr on WWH-OBD, the Chairman questioned the need to convene a special GRPE session on 29 August 2006 to confirm the publication of standard ISO/PAS 27145 and to reconfirm the adoption of the draft gtr. GRPE agreed with the Chairman's suggestion to seek the advice of AC.3, at its June 2006 session.

#### 1.4. Amendments to Regulation No. 49

Documentation: ECE/TRANS/WP.29/GRPE/2006/15; ECE/TRANS/WP.29/GRPE/2006/16.

17. The expert from the EC introduced ECE/TRANS/WP.29/GRPE/2006/15 proposing to insert into Regulation No. 49 a new Annex 10 with the new test procedure for compression ignition engines and positive ignition engines fuelled with natural gas and liquefied petroleum gas based on the WHDC procedure. GRPE adopted the proposal with the same amendments as to part B of ECE/TRANS/WP.29/GRPE/2006/17 reproduced in Annex 2, except the amendment to paragraph 7.8.3.2. which should read in this case:

Paragraph 7.8.3.2., amend to read:

"7.8.3.2. Hot soak period (WHTC only)

Immediately upon completion of the cold start test, the engine shall be soaked for **5 ± 1 minutes.**"

18. The secretariat was requested to submit the proposal to WP.29 and AC.1, for consideration at their November 2006 sessions, as draft Supplement 2 to the 04 series of amendments to Regulation No. 49.

19. The EC expert also introduced ECE/TRANS/WP.29/GRPE/2006/16 proposing to insert into Regulation No. 49 a new Annex 11 with the provisions of the draft gtr on technical requirements for on-board diagnostic systems for diesel engines (WWH-OBD). GRPE also adopted the document with the amendments reproduced below and requested the secretariat to submit the proposal to WP.29 and AC.1, for consideration at their November 2006 sessions, as draft Supplement 2 to the 04 series of amendments to Regulation No. 49.

Through the whole document, replace the reference "ISO 27145" by "ISO/PAS 27145".

Paragraphs 4.6.6. and 4.6.6.1. (former), renumber as paragraphs 4.6.5. and 4.6.5.1.

Paragraph 4.6.6.1.1. (former), renumber as paragraph 4.6.5.1.1. and replace Figure C2 by Figure C2 of paragraph 4.6.5.1.1. of document ECE/TRANS/WP.29/GRPE/2006/8/Rev.1.

Paragraphs 4.6.6.1.2. to 4.6.6.2.2. (former), renumber as paragraphs 4.6.5.1.2. to 4.6.5.2.2.

20. Regarding the review of the title of Regulation No. 49, the expert from the EC volunteered to take this issue into account when preparing the next amendments to the Regulation.

## 2. PARTICULATE MEASUREMENT PROGRAMME (PMP)

Documentation: Informal documents Nos. GRPE-52-8, GRPE-52-9 and GRPE-52-13 of Annex 1 to this report.

21. The Chairman of the PMP working group, Mr. C. Parkin (United Kingdom), informed GRPE that the informal meeting initially scheduled for Friday afternoon, 9 June 2006, had been cancelled. He reported about the progress made by the working group since the previous GRPE session (GRPE-52-13). He added that the "golden vehicle and system" was expected to arrive at the JRC in Ispra (Italy) the first week of June for the bookend testing in order to conclude the light-duty inter-laboratory exercise. During this testing, an "open day" would be organized on 26 and 27 June 2006. He invited all interested GRPE expert wishing to see the new measurement techniques in action. Those experts interested in attending the bookend testing should contact the PMP Secretary (panagiota.dilara@jrc.it). GRPE agreed that the proposals GRPE-52-8 and GRPE-52-9, tabled by OICA, should be considered in detail by the PMP working group during its next session, scheduled to be held at JRC in Ispra, on 12 September 2006.

22. Mr. Parkin also informed GRPE about the PMP working group's intention to have, in Ispra on 13 September 2006, a kick-off meeting for the heavy-duty inter-laboratory correlation exercise. The expert from Germany supported the work done by the PMP working group, although he preferred to start the heavy-duty correlation exercise directly with a Round Robin test instead of another programme with a golden system. GRPE agreed that the PMP working group should consider this subject at its kick-off meeting.

23. For its next session in January 2007, GRPE was expecting to consider the final results of the inter-laboratory exercise for light-duty vehicles and to be informed about the decision on the heavy-duty vehicle inter-laboratory correlation exercise. GRPE agreed that the PMP working group should also meet prior to the next GRPE session (para. 51 below).

3. WORLDWIDE HARMONIZED MOTORCYCLE EMISSION TEST CYCLE (WMTC)

Documentation: Informal document No. GRPE-52-6 of Annex 1 to this report.

24. Mr. C. Albus (Germany), chairing the WMTC working group, reported on the successful informal meeting held at ARAI in Pune (India) on 20 and 21 April 2006. He gave a summary of the current status of the group's work regarding the second phase of the further development of gtr No. 2 (GRPE-52-6). He informed GRPE that the fundamental element group would resume discussion in autumn 2006 and that the WMTC group intended to held its next informal meeting in Ann Arbor (United States of America), on 20 and 21 November 2006 (subject to confirmation by the US delegate).

25. GRPE agreed to resume consideration of this subject at its next session in June 2006. The GRPE Chairman suggested that the group should also meet prior to the next GRPE session (para. 51 below).

4. EXHAUST EMISSION TEST PROTOCOL OF NON-ROAD MOBILE MACHINERY (NRMM)

Documentation: Informal document No. GRPE-52-5 of Annex 1 to this report.

26. The expert from EC-JRC reported on the progress of work made by the NRMM working group during its last meeting in Ispra (GRPE-52-5) and in Geneva prior to the GRPE session (see para. 2). He informed GRPE that the work of the NRMM group was in an important phase and that, at the next GRPE session in January 2007, he would be in the position to give a detailed timeline on the development of the final draft gtr, awaiting the outcome of the next NRMM informal meeting scheduled to be held in Ottawa (Canada) from 27 to 29 September 2006.

27. The Chairman of GRPE suggested that the group should also meet prior to the next GRPE session in January 2007 (para. 51 below).

5. AMENDMENTS TO UNECE REGULATIONS

5.1. Regulation No. 67 (Equipment for liquefied petroleum gas vehicles)

Documentation: Informal documents Nos. GRPE-50-8 and GRPE-52-10 of Annex 1 to this report.

28. Recalling the discussion on GRPE-50-8 distributed during the fiftieth GRPE session, the expert from India introduced an updated proposal (GRPE-52-10) to increase the number of cycles for the endurance test of the pressure regulator and vaporizer to 50,000 operations. The expert from AEGPL considered the number of cycles as too high and renewed his study reservation. Referring to standard ISO 15500, the expert from ISO supported the proposal by India and added that the number of cycles was not reflecting a statistical mean value but the worst-case situation.

29. GRPE agreed to resume consideration of the proposal at its next session in January 2007. For that purpose, the secretariat was requested to distribute GRPE-52-10 with an official symbol (see ECE/TRANS/WP.29/GRPE/2007/2).

5.2. Regulation No. 83 (Emissions of M1 and N1 categories of vehicles)

Documentation: TRANS/WP.29/GRPE/2005/3.

30. Recalling the purpose of TRANS/WP.29/GRPE/2005/3, the expert from OICA underlined the need to insert into the Regulation new provisions to allow special gear shifting strategies and the urgency to make progress on this issue. The expert from Germany informed GRPE that the elaboration of a concrete proposal was still in progress. He stated his intention to submit, jointly with the experts from France and the Netherlands, an official document for consideration at the next GRPE session. The EC expert stated that the European Commission was also collecting evidence on this subject in order to revise its strategy. He announced that, by the end of this year, the study results would be available and volunteered to keep GRPE informed.

31. GRPE agreed to resume consideration of this subject at its next session on the basis of the proposal jointly prepared by Germany, France and the Netherlands.

5.3. Regulation No. 96 (Diesel emissions of agricultural tractors)

Documentation: ECE/TRANS/WP.29/GRPE/2006/7/Rev.1.

32. Recalling the outcome of the discussion at the previous GRPE session, the expert from EUROMOT presented the revised proposal inserting new provisions for constant speed engines (ECE/TRANS/WP.29/GRPE/2006/7/Rev.1). The expert from the United Kingdom preferred to also insert into the proposal deterioration factors for stage III A engines. The expert from Italy questioned the dates for the transitional provisions.

33. The expert from EUROMOT volunteered to prepare a revised proposal for consideration at the next GRPE session in January 2007.

5.4. Regulation No. 101 (CO<sub>2</sub> and fuel consumption)

Documentation: ECE/TRANS/WP.29/GRPE/2006/12; ECE/TRANS/WP.29/GRPE/2006/13.

34. The expert from Switzerland proposed to correct, in the current text of Regulation No. 101, the value of the reference density for natural gas to read 0.699 kg/m<sup>3</sup>. Following the discussion, GRPE agreed to maintain the current value, which is taking into account the presence of inert gas.

35. The EC expert introduced ECE/TRANS/WP.29/GRPE/2006/13 proposing to align the Regulation with the corresponding EU Directive and to extend its scope to vehicles of category N<sub>1</sub>. GRPE adopted the document, not amended, and requested the secretariat to submit it, as

draft Supplement 7 to Regulation No. 101, for consideration to WP.29 and AC.1 at their November 2006 sessions.

5.5. Regulation No. 110 (Specific components for CNG)

Documentation: ECE/TRANS/WP.29/GRPE/2006/6/Rev.1; ECE/TRANS/WP.29/GRPE/2006/11; informal document No. GRPE-52-11 of Annex 1 to this report.

36. The expert from ENGVA introduced ECE/TRANS/WP.29/GRPE/2006/6/Rev.1 regarding the harmonization of fuel connectors. He added that he already received some comments on the new figure inserted in the document and volunteered to prepare a revised proposal. GRPE agreed to have a final review of the revised document at its next session.

37. The expert from India presented a proposal to clarify the applicability of different tests for specific CNG components. GRPE adopted the proposed amendments to Annexes 5, 5A and 5E, with the amendment reproduced below, and requested the secretariat to submit it, as draft Supplement 6 to Regulation No. 110, for consideration to WP.29 and AC.1 at their November 2006 sessions.

Annex E, correct the reference "ISO CD 15500-2" to read "ISO 15500-2".

38. GRPE agreed to resume consideration of the proposed amendments to Annex 5L (number of test cycles for pressure regulators) at its next session, together with similar amendments to Regulation No. 67 (para. 29 above). Thus, GRPE agreed to keep the document on the agenda.

39. The expert from Germany presented a document to extend the requirements for the design of seamless and welded metal liners to the use of stainless steels (GRPE-52-11). GRPE welcomed that proposal and agreed to resume consideration of this subject at its next session. The secretariat was requested to distribute GRPE-52-11 with an official symbol (see ECE/TRANS/WP.29/GRPE/2007/3).

5.6. Regulation No. 115 (Specific LPG and CNG retrofit systems)

Documentation: Informal document No. GRPE-50-10 of Annex 1 to this report.

40. The expert from India recalled the purpose and the outcome of the GRPE discussion of informal document No. GRPE-50-10. GRPE rejected the amendments to the definitions of "mono-fuelled vehicles" and "member of family". With regard to the extension of the scope to three wheelers, GRPE noted not only comments to Regulation No. 115, but also the need to extend at the same time the scopes of Regulations Nos. 40, 67, 83, 85, 100 and 110. The expert from India volunteered to prepare a new proposal with collective amendments to all these Regulations, for consideration at the next GRPE session.

6. HYDROGEN AND FUEL CELL VEHICLES – SUBGROUP ENVIRONMENT (HFCV-SGE)

41. M. Albus, HFCV Project Manager, informed GRPE about the current situation of both subgroups, the Subgroup Environment (SGE) and the Subgroup Safety (SGS).

42. GRPE agreed to resume consideration at its next session. The GRPE Chairman suggested that the SGE subgroup should also meet in Geneva prior to the GRPE session in January 2007 (see para. 51).

7. ENVIRONMENTALLY FRIENDLY VEHICLES (EFVs)

43. The expert from Germany confirmed the intention of his Government to host the next EFV Conference in Dresden (probably in November 2007). He volunteered to keep GRPE experts informed about all details.

44. GRPE welcomed that information and agreed to contribute actively to that event. All interested delegates were invited to contact Mr. Albus. The GRPE Chairman expressed his thanks for the preparedness by Germany to organize that EFV Conference and suggested to resume consideration of the GRPE contribution at the next GRPE session.

8. EXCHANGE OF INFORMATION ON NATIONAL AND INTERNATIONAL REQUIREMENTS ON EMISSIONS

Documentation: Informal document No. GRPE-52-4 of Annex 1 to this report.

45. The expert from Sweden informed GRPE about high evaporative emissions by motor vehicles and its relation to blending of ethanol into petrol (GRPE-52-4). He invited all GRPE experts to send him their comments or results on similar studies.

46. The EC expert reported on the ongoing impact assessment by the European Commission on this issue. He announced that the results would be ready by autumn 2006 and volunteered to keep GRPE informed.

9. 1997 AGREEMENT (INSPECTIONS)

9.1. Rule No. 1

47. GRPE noted that the proposals adopted at its previous session were on the agenda of the forthcoming WP.29 session in June 2006 and agreed to resume consideration of this subject at a future GRPE session, awaiting instructions by the Administrative Committee (AC.4) to the 1997 Agreement.

## 10. CONSIDERATION ON COMMON DEFINITIONS

### 10.1. Clarification of the scopes of Regulations on pollution and energy

Documentation: ECE/TRANS/WP.29/GRPE/2006/14.

48. The expert from IMMA introduced ECE/TRANS/WP.29/GRPE/2006/14 proposing amendments to clarify the scopes of Regulations Nos. 40 and 47. GRPE adopted the proposals, not amended, and requested the secretariat to submit them to WP.29 and AC.1, for consideration at their November 2006 sessions, as draft Supplement 1 to the 01 series of amendments to Regulation No. 40 and as draft Supplement 1 to Regulation No. 47.

## 11. ELECTION OF OFFICERS

49. In compliance with Rule 37 of the Rules of Procedure (TRANS/WP.29/690), GRPE called the election of officers on Thursday afternoon. Mr. B. Gauvin (France) was unanimously re-elected Chairman for the GRPE sessions scheduled for the year 2007.

## 12. OTHER BUSINESS

50. GRPE noted that no new information was presented under this subject.

## AGENDA FOR THE NEXT SESSION

51. For its fifty-third session to be held in Geneva, Palais des Nations, GRPE decided to start on Monday afternoon, 8 January 2007, 14.30h until Friday, 12 January 2007, 12.30h. For that purpose, the following agenda was agreed:

(a) Informal meeting of the GRPE working group on Hydrogen and Fuel Cell Vehicles – Subgroup Environment (HFCV-SGE)

To be held on Monday afternoon, 8 January 2007, from 14.30h till 17.30h. The agenda of the meeting will be prepared by the HFCV-SGE secretariat and distributed to the members of the group prior to the meeting. Note by the secretariat: This meeting will be held without interpretation.

(b) Informal meeting of the GRPE working group on the Worldwide Motorcycle emission Test Cycle (WMTC)

To be held on Tuesday morning, 9 January 2007, from 9.30h till 12.30h. The agenda of the meeting will be prepared by the WMTC secretariat and distributed to the members of the group prior to the meeting. Note by the secretariat: This meeting will be held without interpretation.

(c) Informal meeting of the GRPE working group on the emissions of Non-Road Mobile Machinery (NRMM)

To be held on Tuesday afternoon, 9 January 2007, from 14.30h till 17.30h. The agenda of the meeting will be prepared by the NRMM secretariat and distributed to the members of the group prior to the meeting.

(d) Informal meeting of the GRPE working group on the Particulate Measurement Programme (PMP)

To be held on Wednesday morning, 10 January 2007, from 9.30h till 12.30h. The agenda of the meeting will be prepared by the PMP group secretariat and distributed to the members of the group prior to the meeting.

(e) Informal meeting of the GRPE working group on Off-Cycle Emissions (OCE)

To be held on Wednesday afternoon, 10 January 2007, from 14.30h till 17.30h. The agenda of the meeting will be prepared by the OCE secretariat and distributed to the members of the group prior to the meeting.

(f) Fifty-third session of the GRPE proper

To be held Thursday, 11 January 2007, from 09.30h to Friday, 12 January 2007, until 12.30h <sup>2/</sup>:

1. Regulation No. 49 (Emissions of C.I., NG, and P.I. (LPG) engines)
  - 1.1. Off-Cycle Emissions (OCE)
  - 1.2. Transposition of gtrs into UNECE Regulation No. 49
2. Particle Measurement Programme (PMP)
3. Development of a worldwide motorcycle emission test cycle (WMTC)
4. Exhaust emissions test protocol of Non-Road Mobile Machinery (NRMM)

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<sup>2/</sup> As part of the secretariat's efforts to reduce expenditure, all the official documents distributed by mail prior to the session as well as the informal documents placed on the UNECE WP.29 website, will not be available in the conference room for distribution to session participants. Delegates are kindly requested to bring their copies of documents to the meeting. (The WP.29 website address is: <http://www.unece.org/trans/main/welcwp29.htm> select GRPE and find "working documents" as well as "informal documents"). For the translation of the above-mentioned official documents, delegates can now access the new public Official Document System (ODS) at the website address: <http://documents.un.org>

5. Amendments to UNECE Regulations
  - 5.1. Regulation No. 67 (Equipment for liquefied petroleum gas)
  - 5.2. Regulation No. 83 (Emissions of M1 and N1 categories of vehicles)
  - 5.3. Regulation No. 96 (Diesel emissions of agricultural tractors)
  - 5.4. Regulation No. 110 (Specific components for CNG)
  - 5.5. Regulation No. 115 (Specific LPG and CNG retrofit systems)
6. Hydrogen and Fuel Cell Vehicles – Subgroup Environment (HFCV-SGE)
7. Environmentally Friendly Vehicles (EFV)
8. Exchange of information on national and international requirements on emissions 3/
9. 1997 Agreement (Periodical technical inspections)
10. Other business

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3/ Delegations are invited to submit brief written statements on the latest status in national requirements and, if necessary, to supplement this information orally.

Annex 1

LIST OF INFORMAL DOCUMENTS (GRPE-52-...)  
DISTRIBUTED WITHOUT AN OFFICIAL SYMBOL DURING THE SESSION

No.	Transmitted by	Agenda item	Language	Title	Follow-up
1.	USA/OCE	1.2.	E	Eleventh plenary meeting of the working group on Off-Cycle Emissions, 13 and 14 September 2005, Chicago	(a)
2.	USA/OCE	1.2.	E	Twelfth plenary meeting of the working group on Off-Cycle Emissions, 18 January 2006, Geneva	(a)
3.	EC/WHDC	1.1.	E	Progress report on draft gtr on WHDC	(a)
4.	Sweden	8.	E	Information about high evaporative emissions and its relation to blending of ethanol into petrol	(a)
5.	EC/NRMM	4.	E	Draft minutes of the NRMM WG meeting held in Ispra, at DG-JRC, European Commission, on 26 and 27 April 2006	(a)
6.	D/WMTC	3.	E	Status report on WMTC/Stage 2	(a)
7.	USA/OCE	1.2.	E	Thirteenth plenary meeting of the working group on Off-Cycle Emissions, 5 and 6 April 2006, The Hague, Netherlands	(a)
8.	OICA	2.	E	Why the PMP laboratory verification study is not a sufficient basis for establishing particle number limit values	(a)
9.	OICA	2.	E	Draft presentation to GRPE: ACEA PM-3 programme	(a)
10.	India	5.1.	E	Justification for proposed amendment to ECE Regulation No. 67 (LPG) (Endurance requirements for pressure regulator)	(c)
11.	Germany	5.5.	E	Proposal for draft amendments to Regulation No. 110	(c)
12.	ISO	1.3.	E	Contribution to the WWH-OBd gtr	(a)
13.	UK/PMP	2.	E	PMP Chairman's summary (January – May 2006)	(a)
14.	EC/WHDC	1.1.	E	Report on the 19th meeting of the GRPE working group on the worldwide heavy duty certification procedure (WHDC)	(a)
15.	USA/OCE	1.2.	E	Off-Cycle Emissions gtr: Status report for GRPE	(a)

No.	Transmitted by	Agenda item	Language	Title	Follow-up
16.	Japan/ WWH-OBD	1.3.	E	Report of the WWH-OBD working group to GRPE	(a)

Reconsideration of informal documents from the previous session of GRPE  
(referring to the agenda item of the current session)

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8.	India	5.1.	E	Proposed amendment to ECE Regulation No. 67	(a)
10.	India	5.6.	E	Proposed amendment to ECE Regulation No. 115	(a)

Notes:

- (a) Consideration completed or to be superseded
- (b) Continue consideration at the next session as an informal document
- (c) Continue consideration at the next session as an official working document

Annex 2

ADOPTED AMENDMENTS TO ECE/TRANS/WP.29/GRPE/2006/17 (gtr on WHDC)  
AND TO ECE/TRANS/WP.29/GRPE/2006/15 (Regulation No. 49)  
(see paragraphs 6 and 17 of this report)

Part B

Paragraph 5.2.3.13., amend to read:

"5.2.3.13. **Exhaust** after-treatment systems

The function and ...."

Paragraph 5.2.4.3., amend to read:

"5.2.4.3. Remarks on the choice of the parent engine

The type approval or certification authority may conclude that the worst-case emission ~~rate~~ of the family can best be characterized by testing additional engines. In this case, the **engine manufacturer** shall **submit** the appropriate information to determine the engines within the family likely to have the highest emissions level.

If engines within the family incorporate other ~~variable~~ features which may be considered ....."

Paragraph 6.1., amend to read:

"6.1. Laboratory test conditions

The absolute temperature ( $T_a$ ) of the **intake** air at the inlet to the engine expressed in Kelvin, and ....."

Paragraph 6.6., amend to read:

"6.6. Engine with **exhaust** after-treatment system

If the engine is equipped with an exhaust after-treatment **system**, the exhaust pipe shall have ....."

Paragraphs 6.6.1. and 6.6.2., amend to read:

"6.6.1. Continuous regeneration

..... the manufacturer occur during the test during a sufficient time and the emission results do not scatter by more than  $\pm 15$  per cent.

If the exhaust after-treatment **system** has a security mode that shifts to a periodic regeneration mode, it **shall** be checked according to paragraph 6.6.2. For that specific case, the applicable emission limits **may** be exceeded and would not be weighted.

6.6.2. Periodic regeneration

..... regeneration process, the applicable emission limits may be exceeded.

The measured emissions shall be weighted according to paragraph 8.5.2.2., and the final **weighted** result shall not exceed the applicable emission limits. The test procedure is schematically ....."

Paragraph 7.8.3.2., amend to read:

"7.8.3.2. Hot soak period (WHTC only)

..... by using one of the following options:

- (a) 5 ± 1 minutes hot soak period
- (b) 20 ± 1 minutes hot soak period

The option shall be ....."

Paragraph 7.8.4.3., amend to read:

"7.8.4.3. Particulate sampling

..... the particulate sample probe or transfer tube is maintained proportional to the exhaust mass flow rate **as determined in accordance with paragraph 8.3.3.3.**

If a full flow dilution system is used, the sample pump(s) shall be adjusted so that the flow rate through the particulate sample probe or transfer tube is maintained at a value within ± **2.5** per cent of the set flow rate. If flow compensation (i.e., proportional control of sample flow) is used, it must be demonstrated that the ratio of main tunnel flow to particulate sample flow does not change by more than ± **2.5** per cent of its set value (except for the first 10 seconds of sampling). The average temperature and pressure at the gas meter(s) or flow instrumentation inlet shall be recorded. If the set flow rate cannot be maintained over the complete cycle **within ± 2.5 per cent** because of high particulate loading on the filter, the test shall be voided. The test shall be rerun using a lower **sample** flow rate."

Paragraph 8.1.1., amend to read:

"8.1.1. Raw exhaust gas

.....

Equations (8) and (9) are principally identical with the factor 1.008 in equations (8) and (10) being an approximation for the more accurate denominator in equation (9)."

Paragraph 8.2., amend to read:

"8.2. NO<sub>x</sub> correction for humidity and temperature

As the NO<sub>x</sub> emission ....."

Paragraph 8.3., amend to read:

"8.3. Partial flow dilution (PFS) and raw gaseous measurement

..... to the exhaust mass flow rate. The quality of proportionality **shall be** checked by applying a regression analysis between sample and exhaust flow **in accordance with paragraph 8.3.3.3.** The complete test set up is ....."

Paragraph 8.3.1.5., formula (21), correct the figure "c<sub>a</sub>" to read "**c<sub>b</sub>**".

Paragraph 8.4., amend to read:

"8.4. Full flow dilution measurement (CVS)

.... pump (PDP), a critical flow venturi (CFV) or a subsonic venturi (SSV) **with or without flow compensation.**

For **bag sampling and particulate sampling**, a proportional sample shall be taken from the diluted exhaust gas of the CVS system. **For a system without flow compensation, the ratio of sample flow to CVS flow must not vary by more than ± 2.5 per cent from the set point of the test. For a system with flow compensation, each individual flow rate shall be constant within ± 2.5 per cent of its respective target flow rate.**

The complete test set up is ....."

Paragraph 8.5.2.3. (former), renumber as paragraph 8.5.2.2. and amend to read:

"8.5.2.2. **Exhaust after-treatment systems with periodic regeneration**

The hot start emissions ....."

Annex 3

ADOPTED AMENDMENTS TO ECE/TRANS/WP.29/GRPE/2006/8/Rev.1 (WWH-OBd gtr)  
(see paragraph 13. of this report)

Part A

Paragraph 5., amend to read:

"5. ADMINISTRATIVE CONSIDERATIONS

There are some technical issues associated with this gtr that require provisions to be set out in the procedures for the general operation of global technical regulations.

**To serve the purpose of module B, Contracting Parties are authorized to establish complementary requirements and to adapt requirements to technical progress in accordance with Article 7.6 of the 1998 Agreement.**

Paragraph 4. of module B of this gtr .....

- (a) ..... can be repaired by service personnel.
- (b) to the extent appropriate **according to the laws of the Contracting Parties**, the availability of OBD related information for verifying that replacement parts, which are critical to the correct functioning of the OBD system, are compatible with the vehicle OBD system."

Paragraph 6.2., amend to read:

"6.2. Extension of the methods allowed for the access to OBD information

At the **present** time, there exist two ..... to have one common protocol **for all sectors** operating under the umbrella of "the automotive industry".

Consequently, a sub-group of .....

In a future step, possibly aligned with step 3 ..... with respect to adequate industry leadtime, and **the impact on automotive industry sectors** operating under the umbrella of "the automotive industry"."

Part B

Through the whole part B, replace the reference "ISO 27145" by "ISO/**PAS** 27145".

Insert a new paragraph 3., to read (subject to the decision by WP.29 and AC.3):

"[3.     **TRANSPOSITION**  
Contracting Parties are not required to submit the technical regulation contained in this gtr to their adoption process earlier than three years after its establishment.]"

Module A

Paragraph 4.4.1.2., amend to read:

"4.4.1.2. [reserved for TCP/IP (Ethernet) based wired communication.]"

Annex 1, delete subparagraphs (v) and (vi).

Modul B

Paragraph 1., amend to read (deleting the last subparagraph):

"1.     PURPOSE

This module complements the generic .....

..... the possible enforcement of road-worthiness measures."

Paragraphs 4.6.6. to 4.6.6.2.2. (former), renumber as paragraphs 4.6.5. to 4.6.5.2.2.

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