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World Forum for Harmonization of Vehicle Regulations

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Item 4.7.3 of the provisional agenda

1958 Agreement:

Consideration of draft amendments

to existing UN Regulations submitted by GRPE

Proposal for Supplement 11 to the 06 series of amendments to UN Regulation No. 83 (Emissions of M₁ and N₁ vehicles)

Submitted by the Working Party on Pollution and Energy*

Addendum

* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21, Cluster 3), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraph 6.2., insert a second sub-paragraph to read:

"For the purposes of this paragraph these situations are presumed to occur if the applicable NO_x limit of the table set out in paragraph 5.3.1.4. of this Regulation multiplied by a factor of 1.5 is exceeded. The NO_x emissions during the test to demonstrate compliance with these requirements shall be no more than 20 per cent higher than the above threshold."

Paragraph 8.2., amend to read:

"8.2. The inducement system shall activate at the latest when the level of reagent in the tank reaches:

- (a) In the case that the warning system was activated at least 2,400 km before the reagent tank was expected to become empty, a level expected to be sufficient for driving the average driving range of the vehicle with a complete tank of fuel.
- (b) In the case that the warning system was activated at the level described in paragraph 3.5.(a), a level expected to be sufficient for driving 75 per cent of the average driving range of the vehicle with a complete tank of fuel; or
- (c) In the case that the warning system was activated at the level described in paragraph 3.5.(b), 5 per cent of the capacity of the reagent tank.
- (d) In the case that the warning system was activated ahead of the levels described in both paragraph 3.5.(a) and 3.5.(b), whichever level described in (b) or (c) of this paragraph occurs earlier.

Where the alternative described in paragraph 6.1. is utilised, the system shall activate when the irregularities described in paragraphs 4 or 5 or the NO_x levels described in paragraph 6.2. have occurred.

The detection of an empty reagent tank and the irregularities mentioned in paragraphs 4., 5., or 6. above shall result in the failure information storage requirements of paragraph 7. above taking effect."

Paragraph 8.3.1., amend to read:

"8.3.1. A "no engine restart after countdown" approach allows a countdown of restarts or distance remaining once the inducement system activates. Engine starts initiated by the vehicle control system, such as start-stop systems, are not included in this countdown. Engine restarts shall be prevented immediately after:

- (a) In the case that the inducement system was activated at least 2,400 km before the reagent tank was expected to become empty, the vehicle has travelled a distance expected to be sufficient for driving the average driving range of the vehicle with a complete tank of fuel since the activation of the inducement system, or
- (b) In the case that the inducement system was activated at the level described in paragraph 8.2.(b), the vehicle has travelled a distance expected to be sufficient for driving 75 per cent of the average driving range of the vehicle with a complete tank of fuel since the activation of the inducement system, or
- (c) In the case that the inducement system was activated at the level described in paragraph 8.2.(c), the vehicle has travelled a distance

expected to be sufficient for driving the average driving range of the vehicle with 5 per cent of the capacity of the reagent tank, since the activation of the inducement system, or

- (d) In the case that the inducement system was activated ahead of the levels described in both paragraph 8.2.(b) and 8.2.(c) but less than 2,400 km before the reagent tank was expected to become empty, whichever distance described in (b) or (c) of this paragraph is the shorter, or

the reagent tank becomes empty should this occur earlier."

Paragraph 8.3.4., amend to read:

"8.3.4. A "performance restriction" approach restricts the speed of the vehicle after the inducement system activates. The level of speed limitation shall be noticeable to the driver and significantly reduce the maximum speed of the vehicle. Such limitation shall enter into operation gradually or after an engine start. Shortly before engine restarts are prevented, the speed of the vehicle shall not exceed 50 km/h. Engine restarts shall be prevented immediately after:

- (a) In the case that the inducement system was activated at least 2,400 km before the reagent tank was expected to become empty, the vehicle has travelled a distance expected to be sufficient for driving the average driving range of the vehicle with a complete tank of fuel since the activation of the inducement system, or
- (b) In the case that the inducement system was activated at the level described in paragraph 8.2.(b), the vehicle has travelled a distance expected to be sufficient for driving 75 per cent of the average driving range of the vehicle with a complete tank of fuel since the activation of the inducement system, or
- (c) In the case that the inducement system was activated at the level described in paragraph 8.2.(c), the vehicle has travelled a distance expected to be sufficient for driving the average driving range of the vehicle with 5 per cent of the capacity of the reagent tank, since the activation of the inducement system, or
- (d) In the case that the inducement system was activated ahead of the levels described in both paragraph 8.2.(b) and 8.2.(c) but less than 2400 km before the reagent tank was expected to become empty, whichever distance described in (b) or (c) of this paragraph is the shorter, or

the reagent tank becomes should this occur earlier."

Paragraph 8.4., amend to read:

"8.4. Once the inducement system has prevented engine restarts, the inducement system shall only be deactivated if the irregularities specified in paragraphs 4., 5., or 6. of this appendix have been rectified or if the quantity of reagent added to the vehicle meets at least one of the following criteria:

- (a) Expected to be sufficient for driving 150 per cent of an average driving range with a complete tank of fuel; or
- (b) At least 10 per cent of the capacity of the reagent tank.

After a repair has been carried out to correct a fault where the OBD system has been triggered under paragraph 7.2. above, the inducement system may be reinitialised via the OBD serial port (e.g. by a generic scan tool) to enable the

vehicle to be restarted for self-diagnosis purposes. The vehicle shall operate for a maximum of 50 km to enable the success of the repair to be validated. The inducement system shall be fully reactivated if the fault persists after this validation."

Delete paragraph 8.6. and renumber paragraphs 8.7. and 8.8. as 8.6. and 8.7.

Paragraph 9.3., amend to read:

"9.3. The instructions shall specify if consumable reagents have to be replenished by the vehicle driver between normal maintenance intervals. They shall indicate how the vehicle driver should replenish—the reagent tank. The information shall also indicate a likely rate of reagent consumption for that type of vehicle and how often it should be replenished."

Paragraph 9.4., amend to read:

"9.4. The instructions shall specify that use of, and replenishing of, a required reagent of the correct specifications is mandatory for the vehicle to comply with the certificate of conformity issued for that vehicle type."

Paragraph 10., amend to read:

"10. Operating conditions of the after-treatment system
Manufacturers shall ensure that the emission control system retains its emission control function during all ambient conditions, especially at low ambient temperatures. This includes taking measures to prevent the complete freezing of the reagent during parking times of up to 7 days at 258 K (-15 °C) with the reagent tank 50 per cent full. If the reagent is frozen, the manufacturer shall ensure that the reagent shall be liquefied and ready for correct operation of the emission control system within 20 minutes of the vehicle being started at 258 K (-15 °C) measured inside the reagent tank."
