

**INFORMAL GROUP ON GASEOUS FUEL VEHICLES
Within the UN GRPE (WP29)**

Please submit new work items to:

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Regulation name and reference number

Regulations 110 and 67/01.

Name of Amendment/Work Item

Gas ECU type-approval and start&stop systems – Comments on CLEPA proposals

Specific language for Amendment/Work Item

English

Analysis/testing or data requirements to support the Amendment/Work item

Regulation No. 110

Changes to ECE-R110 revision 2 are made in bold characters:

ECE-R110 part II

“17.1.2. All components of the system shall be type approved as individual parts pursuant to Part I of this Regulation.

17.1.2.1 Notwithstanding the provisions of paragraph 17.1.2., if the CNG demand control is integrated in the engine electronic control unit and is type approved in a vehicle installation during vehicle type approval according to ECE-R110 part II and ECE-R10, no separate type approval of the ECU is necessary. The vehicle type approval shall be pursuant to the applicable provisions laid down in annex 4H. “

Comment

Aegpl agrees with the principle of the proposal. Nevertheless, it should be made clear that R10 should apply to both running mode, petrol and CNG, since the activation of different wiring and sensors may affect the tests: integration of the two ECU's is not sufficient to avoid R 10 tests on petrol. If the group shares this view, and agrees to insert this clarification, a possible extension to cases in which ECU's are separated should be taken into consideration, having to test, anyhow, the electromagnetic compatibility in both running mode.

The following reformulation is proposed:

17.1.2.1 Notwithstanding the provisions of paragraph 17.1.2., if the CNG ~~demand control is integrated in the engine~~ electronic control unit ~~and~~ is type approved in a vehicle installation during vehicle type approval according to ECE-R110 part II and ECE-R10, no separate type approval of the ECU in accordance with ECE-R110 part I is required ~~necessary~~. ECE-R10 requirements and tests shall be complied with on both fuels. The vehicle type approval shall be pursuant to the applicable provisions laid down in annex 4H to the present regulation. “

Changes to ECE-R110 revision 2 are made in bold characters:

“ ...

ECE-R110 Annex 4H

PROVISIONS REGARDING THE APPROVAL OF THE ELECTRONIC CONTROL UNIT

1. The purpose of this annex is to determine the provisions regarding the approval of the electronic control unit.

2. Electronic control unit

2.1. The electronic control unit can be any device which controls the CNG demand of the engine and establishes the cut-off of the automatic valve in case of a broken fuel supply pipe or in case of stalling of the engine, or during a crash.

~~2.1.1 The automatic cylinder valve shall stay in an open position during the commanded stop phase of an automatic stop-start system for a maximum time of 100 seconds.~~

2.2. The switching off delay of the automatic valve after stalling of the engine may not be more than 5 seconds. This delay may extended up to but not more than 100 seconds during the commanded stop phase of an automatic stop-start system.

Comment

The part under review is related to gas ECU. Therefore the new provision should refer to switching off management (under the control of the ECU). Aegpl proposes to change “shall” with “may” as that strategy could be not required in certain applications (see also below).

2.3. The device may be equipped with an automatic ignition advance timing adjuster integrated in the electronic module or separated.

2.4. The device may be integrated with dummy injectors to permit a correct functioning of the gasoline electronic control unit during CNG operation.

2.5. The electronic control unit shall be so designed to operate at temperatures as specified in Annex 5O.

“

ECE-R110 part II

“ ...

17.5.1.2. The automatic cylinder valve shall be operated such that the fuel supply is cut off when the engine is switched off, irrespective of the position of the ignition switch, and shall remain closed while the engine in not running. A delay of 2 seconds is permitted for diagnostic.

17.5.1.3. The automatic cylinder valve ~~shall~~may stay in an open position during the commanded stop phase of an automatic stop-start system for a maximum time of 100 seconds.

Regulation No. 67/01

Changes to ECE-R67 are made in bold characters:

ECE-R67 part II

“17.1.2. All parts of the system shall be type approved for individual parts pursuant to Part I of this Regulation.

17.1.2.1 Notwithstanding the provisions of paragraph 17.1.2., if the CNG demand control is integrated in the engine electronic control unit and is type approved in a vehicle installation during vehicle type approval according to ECE-R67 part II and ECE-R10, no separate type approval of the ECU is necessary. The vehicle type approval shall be pursuant to the applicable provisions laid down in annex 14. “

Comment

See comments to R 110

Text proposal:

17.1.2.1 Notwithstanding the provisions of paragraph 17.1.2., if the CNG-LPG demand control is integrated in the engine electronic control unit and is type approved in a vehicle installation during vehicle type approval according to ECE-R67 part II and ECE-R10, no separate type approval of the ECU in accordance with ECE-R67 part I is required necessary. ECE-R10 requirements and tests shall be complied with on both fuels. The vehicle type approval shall be pursuant to the applicable provisions laid down in annex 14 to the present regulation. “

Changes to ECE-R67/01 are made in bold characters:

“ Annex 14

PROVISIONS REGARDING THE APPROVAL OF THE ELECTRONIC CONTROL UNIT

1. The electronic control unit can be any device which controls the LPG demand of the engine and establishes the cut-off of the remotely-controlled service valve(s), cut-off valves and fuel pump of the LPG-system in case of a broken fuel supply pipe or/and in case of stalling of the engine.
2. The switching off delay of the service cut-off valves after stalling of the engine may not be more than 5 seconds. This delay may extended up to but not more than 100 seconds during the commanded stop phase of an automatic stop-start system.

~~2.1 The remotely controlled service valve shall stay in an open position during the commanded stop phase of an automatic stop-start system for a maximum time of 100 seconds.~~

Comment

See comments to R 110

3. The electronic control unit shall comply with relevant electromagnetic compatibility (EMC) requirements according to Regulation No. 10, 02 series of amendments or equivalent.
4. Electrical failure of the vehicle system may not lead to uncontrolled opening of any valve.
5. The output of the electronic control unit shall be inactive when the electric power is switched off or removed.“

ECE-R67 part II

(The remotely controlled service valve with excess flow valve)

“17.6.1.2. The remotely controlled service valve with excess flow valve shall be controlled such that it is automatically closed when the engine is not running, irrespective of the position of the ignition switch, and shall remain closed as long as the engine is not running.

17.6.1.3. The remotely controlled service valve ~~shall~~ may stay in an open position during the commanded stop phase of an automatic stop-start system for a maximum time of 100 seconds.“

(Remotely controlled shut-off valve)

17.9.4. The remotely controlled shut-off valve shall be installed such that the fuel supply is cut off when the engine is not running or, if the vehicle is also equipped with another fuel system, when the other fuel is selected. A delay of 2 seconds is permitted for diagnostic purposes.

17.9.5. The remotely controlled shut-off valve may stay in an open position during the commanded stop phase of an automatic stop-start system for a maximum time of 100 seconds.

Comments

An equivalent provision for the remotely controlled shut-off valve should be inserted.