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Item 19 of the provisional agenda

Proposal for a new Regulation on electric vehicles of category L**Proposal for amendments to the draft new Regulation
(ECE/TRANS/WP.29/GRSP/2014/11)****Submitted by the chair of the Informal Working Group on
Rechargeable Energy Storage System***

The text reproduced below was prepared by the experts of the Informal Working Group of Rechargeable Energy Storage System (IWG REESS) to solve pending issues on the draft new UN Regulation (ECE/TRANS/WP.29/GRSP/2014/11) as discussed during the fifty-fifth session of the Working Party on Passive Safety (GRSP) (ECE/TRANS/WP.29/GRSP/55, para 39). The modifications to the draft UN Regulation (ECE/TRANS/WP.29/GRSP/2014/11) are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Contents

Paragraph 12., shall be deleted.

Annex 8D, amend to read:

"8D Mechanical shock ~~resulting from stationary vehicle fall down~~"

Text of the Regulation

Paragraphs 1. to 1.2., amend to read:

"1. Scope

This Regulation does not cover post-crash safety requirements of road vehicles.

- 1.1. Part I: Safety requirements with respect to the electric power train of vehicles of ~~categories~~ **category L**¹ with a maximum design speed exceeding 6 km/h, equipped with one or more traction motor(s) operated by electric power and not permanently connected to the grid, as well as their high voltage components and systems which are galvanically connected to the high voltage bus of the electric power train.

~~Part I of this regulation does not cover post-crash safety requirements of road vehicles.~~

- 1.2. Part II: Safety requirements with respect to the Rechargeable Energy Storage System (REESS) of vehicles of ~~categories~~ **category {L}** with a maximum design speed exceeding 6 km/h, equipped with one or more traction motors operated by electric power and not permanently connected to the grid.

Part II of this Regulation does not apply to REESS(s) whose primary use is to supply power for starting the engine and/or lighting and/or other vehicle auxiliaries systems."

Insert a new paragraph 5.1.3.3., to read:

"5.1.3.3. Fuel cell vehicles

If the minimum isolation resistance requirement cannot be maintained over time, then protection shall be achieved by any of the following:

- (a) **Double or more layers of solid insulators, barriers or enclosures that meet the requirement in paragraph 5.1.1. independently;**
- (b) **On-board isolation resistance monitoring system together with a warning to the driver if the isolation resistance drops below the minimum required value. The isolation resistance between the high voltage bus of the coupling system for charging the REESS and the electrical chassis need not be monitored, because the coupling system**

¹ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.2, para. 2. - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

for charging is only energized during charging of the REESS. The function of the on-board isolation resistance monitoring system shall be confirmed as described in Annex 5."

Paragraph 5.1.3.3., renumber as 5.1.3.4.

Paragraph 5.2.3., amend to read:

"5.2.3. Protection against electrolyte spills
Vehicles ... functional operation.
When the REESS is **in the put** upside-down **position**, no electrolyte shall spill."

Paragraph 6.4.2., amend to read:

"6.4.2. Mechanical shock ~~resulting from stationary fall over~~"

Paragraph 6.4.2.2.2., amend to read:

"6.4.2.2.2. For a high voltage REESS the isolation resistance of the tested-device shall ensure at least 100 Ω/Volt for the whole REESS measured after the test in accordance with Annex 4B to this Regulation. ~~or the protection degree IPXXB shall be fulfilled for the tested device.~~"

Paragraph 12., shall be deleted.

Annex 6, Part 1,

Item 3.4.3., amend to read:

"3.4.3. **Rated c**Capacity (Ah):"

Insert new items 4. to 4.6., to read:

- 4. Fuel Cell (if any)**
- 4.1. Trade name and mark of the fuel cell:**
- 4.2. Types of fuel cell:**
- 4.3. Nominal voltage (V):**
- 4.4. Number of cells:**
- 4.5. Type of cooling system (if any):**
- 4.6. Max Power(kW):**"

Items 4. to 7.4.2., renumber as items 5. to 8.4.2.

Annex 6, Part 2,

Item 1.4.3., amend to read:

"1.4.3. **Rated c**Capacity (Ah):"

Item 2.3.2., amend to read:

"2.3.2. **Rated c**Capacity (Ah):"

Annex 8A, paragraph 3.2., amend to read:

"3.2. Test procedure

...

At the request of the manufacturer a vibration test profile determined by the vehicle-manufacturer, verified for the vehicle application and agreed with the Technical Service may be used as a substitute for the frequency - acceleration correlation of table 1 or table 2. The approval of a REESS tested according to this condition shall be limited to approvals for a specific vehicle type.

After the vibration...."

Annex 8C, paragraph 2.1., amend to read:

"2.1. General test conditions

(a) ~~Before starting the test the SOC is at least 95 per cent of the normal operating range as given by the manufacturer;~~
Adjust the SOC to at least 90 per cent of the rated capacity as specified in the Annex 6, Part 1, paragraph 3.4.3. or paragraph 1.4.3. of Annex 6, Part 2 or paragraph 2.3.2. of Annex 6, Part 3.

(b) The test ..."

Annex 8D, the title, amend to read:

"Mechanical shock ~~resulting from stationary vehicle fall down~~"

Annex 9B,

Paragraphs 1. and 2., amend to read:

"1. General

The isolation resistance shall be measured after the water resistance performance test has been conducted. ~~The degree of protection of the REESS shall meet the requirements mentioned below.~~

2. Procedure

...

(b) subsequently, apply 500V DC between all ~~the inputs and the vehicle's exposed conductive parts including the electrical chassis~~ **high voltage inputs and the vehicle's exposed conductive parts/electrical chassis** if present to measure the ~~insulation~~ **isolation** resistance."

II. Justification

These amendments to ECE/TRANS/WP.29/GRSP/2014/11 have been discussed and agreed upon by the experts of the IWG REESS during its twelfth meeting.

The following issues are addressed:

- (a) Clarify that the new UN Regulation does not dealing with post-crash requirements;
- (b) Align the provisions of the draft UN Regulation with the requirements of the existing requirements for vehicles of category M and N in UN Regulation No. 100;
- (c) Introduce necessary editorial changes.