Proposal for supplement 03 to the 04 series of amendments and supplement 06 to the 03 series of amendments to UN Regulation No. 100 (Electric power trained vehicles)

The text reproduced below was prepared by the experts from France to correct inconsistencies following the amendment of regulation 100 by vehicles of category O. The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal

Paragraph 5.1.4.4., amend to read:

"5.1.4.4. If an isolation resistance monitoring system is provided, and the isolation resistance less than the requirements given in paragraph 5.1.3. is detected, a warning shall be indicated to the driver. The function of the on-board isolation resistance monitoring system shall be confirmed as described in Annex 6.

In case of vehicles of category O, the trailer shall provide an optical and/or audible warning to the driver of the towing vehicle.

In addition, in case of vehicles of category O3 and O4, the trailer may provide to the towing vehicle a signal to address an optical warning according to this paragraph and/or an audible warning (e.g. transmission via CAN-Bus according to ISO 11992-2)."

Paragraph 5.2.3., amend to read:

"5.2.3. Warning in the event of failure in REESS

The vehicle shall provide a warning to the driver when the vehicle is in active driving possible mode in the event specified in paragraphs 6.13. to 6.15.

In case of optical warning, the tell-tale shall, when illuminated, be sufficiently bright to be visible to the driver under both daylight and night-time driving conditions, when the driver has adapted to the ambient roadway light conditions.

This tell-tale shall be activated as a check of lamp function either when the propulsion system is turned to the "On" position, or when the propulsion system is in a position between "On" and "Start" that is designated by the manufacturer as a check position. This requirement does not apply to the tell- tale or text shown in a common space.

Notwithstanding the provisions above in case of vehicles of category O, the trailer shall provide an optical and/or audible warning to the driver of the towing vehicle in the event specified in paragraphs 6.13. to 6.15.

In addition, in case of vehicles of category O3 and O4, the trailer may provide to the towing vehicle a signal to address an optical warning according to this paragraph and/or an audible warning (e.g. transmission via CAN-Bus according to ISO 11992-2) in the event specified in paragraphs 6.13. to 6.15.

The requirements of this paragraph related to paragraph 6.15 do not apply to REESS that are solely installed on vehicles of category O that are not designed to carry occupants at any time nor to batteries on vehicles of category O that are not designed to carry occupants at any time, used for recuperation only."

Paragraph 5.3.3., amend to read:

"5.3.3. If the REESS can be externally charged, vehicle movement by its own propulsion system shall be impossible as long as the vehicle connector is physically connected to the vehicle inlet.

This requirement shall be demonstrated by using the vehicle connector specified by the vehicle manufacturer.

In case of vehicles of category O a trailer ~~parking~~ brake shall be automatically activated as long as the trailer connector is physically connected to the trailer inlet.

The above requirements are only applicable for vehicles when charging from a stationary charging point, with a charging cable of finite length, through a vehicle coupler comprising a vehicle connector and a vehicle inlet."

Paragraph 6.4.1.3., amend to read :

"(c2) Electrolyte leakage if tested according to paragraph 6.4.1.2.

After the vehicle based test (paragraph 6.4.1.1.), REESS shall remain attached to the vehicle by at least one component anchorage, bracket, or any structure that transfers loads from REESS to the vehicle structure, and REESS located outside the passenger compartment shall not enter the passenger compartment.

After the component based test (paragraph 6.4.1.2.) the Tested-Device shall be retained by its mounting and its components shall remain inside its boundaries.

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 5A **to this Regulation after the vehicle based test (paragraph 6.4.1.1.)** or **in accordance with** Annex 5B to this Regulation **after the component based test (paragraph 6.4.1.2.)** ~~to this Regulation~~, or the protection degree IPXXB shall be fulfilled for the Tested-Device.

For a REESS tested in accordance with paragraph 6.4.1.2., the evidence of electrolyte leakage shall be verified by visual inspection without disassembling any part of the Tested-Device."

Paragraph 6.4.2.3., amend to read :

"(c2) Electrolyte leakage if tested according to paragraph 6.4.2.1.2. or paragraph 6.4.2.2

For a high voltage REESS, the isolation resistance of the Tested-Device shall ensure at least 100 Ω/Volt for the whole

REESS measured in accordance with Annex 5A **to this Regulation after the vehicle specific component test (paragraph 6.4.2.1.2)** or **in accordance with** Annex 5B **after the component based test (paragraph 6.4.2.2.)** of this Regulation or the protection degree IPXXB shall be fulfilled for the Tested-Device."

Paragraph 6.15., amend to read:

"6.15. Thermal propagation.

For a REESS containing flammable electrolyte, the vehicle occupants shall not be exposed to any hazardous environment caused by thermal propagation which is triggered by an internal short circuit leading to a single cell thermal runaway. To ensure this, the requirements of paragraphs 6.15.1. and 6.15.2. shall be satisfied.

The requirements of this paragraph do not apply to REESS that are solely installed on vehicles of category O that are not designed to carry occupants at any time nor to batteries on vehicles of category O that are not designed to carry occupants at any time, used for recuperation only."

II. Justification

During WP.29, 194th session of November 2024, the scope of regulation 100 has been amended by vehicles of category O. The modifications introduced by this informal document

are the same as in the informal document provided for supplement 01 to the 05 Series of Amendments, except for the modifications in paragraph 6.15.

1. Paragraph 5.2.3 on warning in the event of failure in REESS has been amended to add requirements for category O vehicles, with the following justification : "*it is recommended that the trailer is able to provide a signal to the towing vehicle and/or the trailer will give a direct warning*" (GRSP-75-02-Rev.1).

Some specific indications have been added for vehicles of category O3 and O4: "*In case of vehicles of category O3 and O4, the trailer may provide to the towing vehicle a signal to address an optical warning according to this paragraph and/or an audible warning (e.g. transmission via CAN-Bus according to ISO 11992-2) in the event specified in paragraphs 6.13. to 6.15*.".

Those specific indications are non-mandatory and only apply in addition to the following prescriptions for vehicles of category O: "*In case of vehicles of category O, the trailer shall provide an optical and/or audible warning to the driver of the towing vehicle in the event specified in paragraphs 6.13. to 6.15*."

The modification presented in this informal document clarifies the prescriptions for vehicles of category O and avoid any misunderstanding.

2. The main purpose of paragraph 6.15 requirements is to ensure occupant safety in a vehicle. Most vehicles of category O are not designed to carry occupants. However, some of them can carry occupant, and should be then subject to paragraph 6.15 requirements. Paragraphs 6.15 and 5.2.3 has been amended accordingly.

3. Paragraph 5.1.4.4 hasn't been amended to include provisions related to vehicles of category O. The warning requirements of this paragraph should be aligned with the requirements of paragraph 5.2.3.

4. According to paragraph 5.3.3, in case of vehicles of category O, a trailer brake shall be automatically activated as long as the trailer connector is physically connected to the trailer inlet, to prevent accidental or unintended vehicle movement. This requirement should allow different braking system (e.g parking brake, service brake).

5. Paragraphs 6.4.1.3 and 6.4.2.3 are have been amended for clarification purposes.