

Japanese Comments concerning the US proposal for Electric Vehicles (46th GRRF Inf. Doc. No.3)

Japan generally supports this US proposal because it will contribute to harmonization between R13H and FMVSS135 and also introduce a provision for the new technology of “Electrically-actuated brakes”.

However, as far as Electrically-actuated brakes are concerned, R13H has already introduced the provisions of EBS and Japan considers the US proposal would duplicate some of those provisions. We would point out that Electrically-actuated brakes can be applied to any vehicle, not just to electric vehicles.

Other items of the text in the US proposal, which differ in philosophy should be discussed in conjunction with the earlier 46th GRRF Inf. Doc.No.4 from Japan and a further informal document which Japan now submits.

1) General comments for "electrically-actuated brakes"

(Electrically-actuated brakes imply a non-hydraulic, Brake by wire system which uses Electro-mechanical brakes)

Electrically-actuated brakes are deemed to be one kind of EBS. R13H with its EBS requirements already fundamentally includes "electrically-actuated brakes".

For this reason, it should be sufficient to add requirements for the specified system about which the US is concerned:

a brake system having actuation directly powered by an electric vehicle traction battery which requires independent external charging.

Some requirements for this particular system are not already prescribed in R13H.

2) Comments for each proposal

(1) 2.16.1. Definition of electrically-actuated brakes

It is not appropriate to add "electrically-actuated brakes" to para. 2.16, since the purpose of 2.16 is to define the meaning of “actuation”. The various forms of braking system are covered on the definition of ‘transmission’ which is the context in which they differ.

Therefore it is not to be necessary to define electrically-actuated brakes specifically since we do not define hydraulically or pneumatically actuated brakes.

(2) 5.2.1.8. Additional requirement for electric vehicles

Same as R13H

(3) 5.2.18.6. State of charge of batteries for EVs

This SOC definition would be applied not only EV but to all other vehicles.

Proposed amendment:

"State of charge of traction batteries" would limit the application.

(4) 5.2.18.6.1. The measurement of SOC is acceptable in principle.

5.2.18.6.2. The condition of SOC when testing including burnish

This corresponds to items 7, 8 and 9 of 46th GRRF Inf. Doc. 4.

We should discuss the necessity of adding this to R13H and also the appropriate way to measure SOC.

- (5) 5.2.21. Brake failure and defect warning signals (general requirement)

Same as R13H

- (6) 5.2.21.5. Warning signal for electrically-actuated brakes

We believe it is not necessary to add the new warning signal requirement to R13H.

Because system failure warning is already defined in 5.2.21.1.1 and the warning for falling voltage is defined in 5.2.20.5.

- (7) Annex 3. 1.2. Test condition

Same as R13H

- (8) 1.2.11. SOC condition for electrically-actuated brakes

This condition should be applied to the specified system which causes concern, and not to the other systems where the SOC condition is already prescribed.

Proposed amendment (1st line):

For a vehicle with electrically-actuated brakes which use power from the traction batteries having energy exclusively supplied from an independent external charging system, each battery providing power to

- (9) 1.2.11.1. Test condition of SOC for the specific system defined in 1.2.11.

It is appropriate to add the provision and we should agree the figure of the requirement.

- (10) 1.2.11.2. Test condition of SOC for the system other than defined in 1.2.11.

It is not necessary to add this requirement for the test condition of SOC because the power supply of EBS is already defined in 5.2.20.6.

- (11) 1.5.1. Heating procedure

Same as R13H

- (12) 1.5.1.6. The vehicle speed in the heating procedure and hot performance test(US)

- 1.5.2.5. The vehicle speed at heating procedure and hot performance test(ECE)

These requirements correspond to items No. 15 and 16 of 46th GRRF Inf. Doc. 4.

We should discuss further including the philosophy of the tests.

- (13) 2.1. Service Braking System

Same as R13H

- (14) 2.1.3. Requirement for electrically-actuated brakes

The requirement should be applied to the specific system only and not to any other systems since their requirements are already prescribed as in (8).

Proposed amendment:

A vehicle equipped with electrically-actuated brakes using traction batteries having energy exclusively supplied from independent external charging system also performs the following test series, with the batteries
