

Status report about informal group Hydrogen / Fuel Cell - Vehicles

Transmitted by the chairman (Germany)

1. Meetings

Since 44th GRPE the 4th meeting of the informal group took place on 14/15 November 2002 in Cologne (Ford). The progress made in that meeting was based on the outcome of several preparation meetings with GRPE and ISO experts.

2. Draft Regulation on Liquid Hydrogen Onboard Storage Systems

The draft regulation on LH2 was finalised with only one outstanding issue as revision 13 (25.11.2002) by the informal group and was transmitted as informal document No. 3 to 45th GRPE. The contents is as follows:

“REGULATION

- 1 SCOPE
- 2 DEFINITIONS

Part I. SPECIFIC COMPONENTS OF MOTOR VEHICLES USING LIQUID HYDROGEN

- 3 APPLICATION FOR APPROVAL
- 4 MARKINGS
- 5 APPROVAL
- 6 SPECIFICATIONS REGARDING HYDROGEN COMPONENTS
- 7 MODIFICATIONS OF A TYPE OF A SPECIFIC COMPONENT AND EXTENSION OF APPROVAL
- 8 CONFORMITY OF PRODUCTION
- 9 PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 10 PRODUCTION DEFINITELY DISCONTINUED
- 11 NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS; AND OF ADMINISTRATIVE DEPARTMENTS

Part II. VEHICLES WITH REGARD TO THE INSTALLATION OF SPECIFIC COMPONENTS FOR THE USE OF LIQUID HYDROGEN

- 12 APPLICATION FOR APPROVAL
- 13 APPROVAL
- 14 REQUIREMENTS FOR THE INSTALLATION OF SPECIFIC COMPONENTS FOR THE USE OF HYDROGEN WITHIN MOTOR VEHICLES
- 15 MODIFICATION OF A VEHICLE TYPE OR HYDROGEN SYSTEM AND EXTENSION OF APPROVAL
- 16 CONFORMITY OF PRODUCTION
- 17 PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 18 PRODUCTION DEFINITELY DISCONTINUED
- 19 NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS; AND OF ADMINISTRATIVE DEPARTMENTS

- 20 REFERENCES

ANNEXES

- 1 Essential characteristics of the specific component
- 2 Essential characteristics of the vehicle , engine and Hydrogen-related system
- 3 Arrangement of the specific component approval marks
- 4 Communication concerning the approval or refusal or extension or withdrawal or production definitely discontinued of a type of Hydrogen component, pursuant to Regulation No. xx
- 5 Arrangements of approval marks for a vehicle type with regard to the installation of a Hydrogen system
- 6 Communication concerning the approval or refusal or extension or withdrawal or production definitely discontinued of a vehicle type with regard to the installation of a Hydrogen system pursuant to Regulation No. xx
- 7 Requirements for specific components
- 7A Provisions regarding the approval of container(s)
- 7B Provisions regarding the approval of pressure relief devices
- 7C Provisions regarding the approval of Hydrogen valves
- 7D Provisions regarding the approval of heat exchangers
- 7E Provisions regarding the approval of refuelling connections or receptacles
- 7F Provisions regarding the approval of pressure regulators
- 7G Provisions regarding the approval of sensors for Hydrogen
- 7H Provisions regarding the approval of flexible fuel lines
- 8A Approval test procedures for the container
- 8B Approval test procedures for other specific components
- 8C Hydrogen compatibility test
- 9 Special requirements to be applied to the safety aspects of complex electronic vehicle control systems
- 10 Provisions regarding Hydrogen Identification marks for public service vehicles
- 11 List of EN/ISO equivalent standards”

Revision 13 includes the result of all amendments discussed in the informal group since the original draft proposal from EIHP (revision 7). Special thanks should be given to ISO, The ISO contribution ensures best possible compatibility between the draft regulation and existing ISO standards. This will be a important assumption for a future GTR development.

The only outstanding issue in the draft regulation is concerning the container approval in section 6.2.1:

“6.2 Provisions regarding Hydrogen container(s)

6.2.1 The Hydrogen container(s) shall be type-approved pursuant to the provisions laid down in Annexes 7A of this Regulation. *[The performance of Hydrogen container(s) made from materials other than metal shall be demonstrated to be equivalent to the requirements of Annex 7A of this Regulation according to existing International Standards.]*”

It was not possible to find a solution for this more general question in the informal group. With that option there exists a kind of “legal by-pass” and there is no motivation to amend the regulation concerning future materials and suitable tests. This is the position of several group members from the governmental side. On the other hand the industry argues, that without the possibility of equivalent performance tests the development process of future technologies will be slowed down.

3. Draft Regulation on Compressed Hydrogen Onboard Storage Systems

The draft regulation on CGH2 is still under discussion in the informal group. Beside other comments to revision 10 of the draft regulation the main open questions are :

- Equivalent performance tests for containers (similar discussion LH2).
- Marking of (small) components.
- Reduction of number of components to be approved (Japan proposal).
- Provisions for removable containers (PSA proposal).

An extra ad hoc meeting of CGH2 experts is scheduled on 23/24 January to discuss the outstanding issues. The result will be discussed at the next informal meeting.

4. Fuel cells

The members of the informal group were informed about the request from GRPE to incorporate the item concerning fuel cells in the agenda of the future meetings. The former title of the GRPE informal group "Hydrogen Vehicles – Onboard Storage Systems" should be extended to "Hydrogen / Fuel Cell – Vehicles".

5 Next meeting

The next meeting (5th) of the informal group is scheduled for 13/14 February in Rüsselsheim (Opel).

All presentations and documents concerning the informal group are available on the EIHP website (www.eihp.org)