

**OUTSTANDING COMMENTS ON THE
GRPE DRAFT ECE COMPRESSED GASEOUS HYDROGEN (CGH₂) REGULATION
Version 10 Dated 06.11.02
AFTER THE GRPE CGH₂ EXPERTS MEETING IN MUNICH 23-24 JANUARY 2003
(NON GRPE/ISO HARMONIZATION)**

GRPE - 010

30-01-2003

Table 1: GENERAL COMMENTS

Paragraph/ Annex	Organisation	Comments/Proposed Modification	Agreed	Final Modification Or Reason For Rejection
General	RDW	Consider implications of container assemblies. 1.	-	<p style="color: red;">Reword 14.3.1 by deleting “or Container Assembly”</p> <p style="color: red;">The following issues must be resolved before shut-off valves can be removed:</p> <ol style="list-style-type: none"> 1. Limit no. of containers per container assembly 2. Clarify 6.2.3 regarding how an assembly is type approved. 3. Change Annex 7 to containers or container assemblies 4. What if there are 3 different types of containers in each assembly? 5. Consider max no of containers and the total volume 6. Flexible fuel lines shall be prohibited within Container Assemblies (6.2.3 + a new paragraph). Indicate that the manufacturer of the container is the manufacturer of the container assembly. 7. Containers within an assembly must be of the same “design”. 8. Consider fuel line burst pressure (6.4) relative to the container 9. Vibration between containers and fuel lines

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General	-	Agree detail of the PSA removable container proposal: See original proposal at the end of this document	-	See GRPE Doc. No. 008 RDW wish to discuss major points
General/ 14.1.17	UTC	<p>The current draft requires a minimum factor of 1.3 between the nominal working pressure (NWP) and the maximum allowable working pressure (MAWP) with regard to components down-stream of the first regulator. This margin is necessary for thermal expansion only if the system can "trap" pressurized hydrogen between shut-offs as part of normal operation including start/stops (as we do not want the Safety Relief Valve to actuate as part of normal operation). A 1.3 factor is not required if the system has features to prevent the "trapping" and/or heating during all normal operating modes.</p> <p>My proposal is as follows: The MAWP shall be at least 1.3 times the NWP unless the system is configured and controlled to normally prevent the "trapping" of pressurized fuel without activation of safety relief devices. If the system is properly configured and controlled to normally prevent the "trapping" of pressurized fuel then the MAWP may be selected by the vehicle manufacturer to a value as low as 1.1 times the NWP.</p>		

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		I recommended a value of 1.1 because typical safety relief systems require at least a 10% margin above normal operating levels so it shouldn't be overly prescriptive.		
General & 2.1.26	EIHP2	<p>If the TUV proposal to restrict Type Approval to Class 0 components + safety related components is accepted the following changes to the scope of the document should be considered: Reword: 2.1.26: "<u>Hydrogen System</u>": An assembly of <i>Hydrogen Components</i> and connecting parts fitted on motor vehicles using hydrogen, excluding <i>the Hydrogen Conversion System(s)</i>.</p> <p>2.1.23: "<u>Hydrogen Conversion Unit</u>": Any unit designed for the conversion of hydrogen into electrical, mechanical or thermal energy including internal combustion engines and fuel cell stacks.</p> <p>Modify references to <i>Hydrogen Conversion Unit</i>, "Propulsion Systems" and APU's</p>	-	To be addressed by the Ad-hoc Working Group

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2.1.32	Powertech	Confirm normal conditions are at 0 or 15 degC		??? RA/PT to check
2.2	GRPE Ad-hoc WG	<i>"In view of the common view expressed by all the national administrations against type 5, the Chairman suggests to put this subject between square brackets (type 5 and § 6.2.2.) to be reported to GRPE. The members agree to look for a reworded text that can be accepted as compromise. The Chairman commits himself to contact relevant parties to find out what compromise can be reached prior to the next GRPE session."</i>		???
Ann. 8: B1.1 & 2.1	TUV	No. of samples for plastic should be 5 for better statistics		???
Ann. 8: B2.2	TUV	The amount of acceleration during the ageing test should be discussed . If necessary change values for pressure, duration or temperature		???
Ann.8, Tab.B5.1	TUV	Increase no. of test cycles for manual valves to 100		???
Ann.8, B5.2.1 iii)	Powertech	Add "...and at 1.25 NWP" after max. material temp.		???

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Table 2: EDITORIAL COMMENTS

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Annex 7: B13.2 & 3	VTEC	Change "...given in..." to "...stated in..."		
