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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Item 6 of the provisional agenda

Reports of informal working groups

Report of the informal working group on “Provisions on equipment for tanks and pressure receptacles”

Transmitted by the European Industrial Gases Association (EIGA)

Introduction

1. The working group had its first meeting in Munich on 9th and 10th July. Eight members of the working group were present representing Germany, Switzerland, AEGPL and EIGA. The agenda concentrated on pressure receptacles and their closures, seeking to distinguish which provisions applied to the pressure receptacle as a whole and those applying only to the pressure receptacle without closures or other service equipment. Attention was also given to the need for new provisions to be used when closures are subject to separate conformity assessment.

2. The working group started by studying the text of Section 6.2.1 to determine what text changes were needed and how to distinguish between the various components that make up a completed pressure receptacle. It became ever more obvious that the definition of pressure receptacle would need to be expanded to clarify that it means the whole assembly as presented for filling. Also a term and a definition is needed for a pressure receptacle without closures and service equipment in the state that its conformity is usually assessed.

Outcome of the first meeting

3. The following definitions were developed. They are not finalised at this stage and are presented to give an insight into the thinking of the working group and the way the work is developing. (changes underlined)

"Pressure receptacle" means a receptacle intended for holding substances under pressure including their closures and other service equipment and is a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles, metal hydride storage systems, bundles of cylinders and salvage pressure receptacles;

"Pressure receptacle shell" means cylinders, tubes and pressure drums without their closures or other service equipment, but including any permanently attached devices for safe handling;

"Cylinder shell" means a cylinder without its closure or other service equipment, but including any permanently attached devices for safe handling;

"Service equipment"

- (a) Of the tank means filling and emptying, venting, safety, heating and heat insulating devices and measuring instruments;
- (b) Of the elements of a battery-vehicle or of a MEGC means filling and emptying devices, including the manifold, safety devices and measuring instruments;
- (c) Of an IBC means the filling and discharge devices and any pressure-relief or venting, safety, heating and heat insulating devices and measuring instruments;
- (d) Of a pressure receptacle means the closure, handling device(s), manifold(s), pressure relief device(s), porous material and any permanently attached accessories;

"Bundle of cylinders" means a transportable pressure receptacle comprising an assembly of cylinders or cylinder shells that are fastened together and which are interconnected by a manifold and carried as a unit. The total water capacity shall not exceed 3 000 litres except that bundles intended for the carriage of toxic gases of Class 2 (groups starting with letter T according to 2.2.2.1.3) shall be limited to 1 000 litres water capacity;

"Metal hydride storage system" means a single complete hydrogen storage system, including a pressure receptacle shell, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the carriage of hydrogen only;

4. Closures were identified as the group of equipment that is subject to separate conformity assessment and accordingly, the following text was developed for insertion into provision 6.2.1.5.1 to cover initial inspection and test.

On an adequate sample of closures:

(k) Verification of metallic and non-metallic materials;

(l) Verification of dimensions;

(m) Verification of cleanliness;

(n) Inspection of completed assembly;

(o) Verification of marks.

For all closures:

(p) Testing for leaktightness.

Further work

5. The whole of section 6.2.1 was reviewed for compliance with the above definitions, but this review has not been carried out for 6.2.3, P200 and 4.1.6. When considering 6.2.3 the relation of "demountable accessories having a direct safety function" to the above definitions will need to be decided.

6. The following items have also been identified for consideration by the working group

- (a) Is there a need to include requirements for pressure relief devices?
- (b) Acetylene requires further work: the working pressure is required as a marking on acetylene cylinders, but is not defined. Also, how is the conformity assessment of the porous material in an acetylene cylinder organised in relation to the conformity assessment of the cylinder shell. At present the regulations specify that the porous material is "of a type that conforms to the requirements and testing

specified by the competent authority” when in practice the requirements are specified in referenced standards.

(c) How is safety to be ensured when the closure and the pressure receptacle shell have different pressure ratings?

7. The next meeting of the working group is planned for 24th November from 13.30 to 17.30 at AFNOR in Paris and on 25th November 08.30 to 16.00 at the head office of Air Liquide. Tanks will not be considered at this meeting.

8. Clearly the texts being developed for pressure receptacles will need to be taken to the UN Sub Committee of Experts on Transport of Dangerous Goods since they are mostly amendments to the UN Model Regulations.
