

## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the

Working Party on the Transport of Dangerous Goods

Bern, 17–21 March 2014

Item 2 of the provisional agenda

Tanks

28 February 2014

### **Comments on ECE/TRANS/WP.15/AC.1/2014/32: Holding times for refrigerated liquefied gases in tank containers and demountable tanks**

**Transmitted by the Government of the United Kingdom**

#### **Introduction**

1. The UK very much appreciates the efforts of the European Industrial Gases Association (EIGA) in bringing forward the proposals set out in ECE/TRANS/WP.15/AC.1/2014/32. After receiving it, we suggested to EIGA that their guidance document referenced in paragraph 1 should be made available to the Working Group on Tanks, as well as the Standards Working Group, in advance of this Joint Meeting. We see that it is now in fact available as INF.9.
2. We note that a number of the comments made by delegates during the September 2013 session have been addressed in the new proposal, but this is not the case for all. Notably, the references throughout the text are to tank containers and demountable tanks, but as has previously been pointed out, this is an issue for tank wagons and tank containers. Other parts of the proposed text require further clarification, either by adding definitions, cross references or additional explanatory wording. In some instances, a different layout would be required.
3. The UK believes that the following issues should be given particular consideration:
  - (a) a definition of “holding time” (and perhaps also “reference holding time”) should be added to 1.2.1 of RID/ADR;
  - (b) in the note under new TU42, it is unclear whether this standard provides a method of calculating just the reference holding time as referred in the note under new 6.8.3.4.18 or the actual holding time, too;
  - (c) at 6.8.3.4.18, the reference holding time and initial pressure should be determined and marked for each refrigerated liquefied gas intended for carriage, as is the case for portable tanks;
  - (d) the EIGA guidance document should be available on the non-members’ part of their website or, if they do not object, on the UNECE and OTIF websites (see for example the CEFIC guidelines referred to in the notes to RID 1.4.3.3(f) and 1.4.3.7.1(b) and (d) (ii)); and
  - (e) 6.8.3.4.17-18 may not be the best location for the new text. While 6.8.3.4 does deal (appropriately) with inspections and tests, the heading for the paragraphs

beginning at 6.8.3.4.10 refers only to battery-wagons/vehicles and MEGCs. An alternative would be to insert a new 6.8.3.4.10-11 at the end of the previous section and renumber the existing paragraphs from 6.8.3.4.10 onwards.

4. The UK can put forward amendments which address some of the issues raised above, with the aim of facilitating agreement in time for inclusion of new text in the 2015 editions of RID/ADR/ADN. Others will need further discussion.

## Proposal

### In 1.2.1, add:

““*Holding time*” means the time that will elapse from the establishment of the initial filling condition until the pressure has risen due to heat influx to the lowest set pressure of the pressure limiting devices (s) of tanks intended for the carriage of refrigerated liquefied gases.

*NOTE: For portable tanks, see 6.7.4.1.”*

### At 4.3.5 for RID only, add

“*TU41 (Reserved)*”.

NB An alternative might be a new 4.3.3.5 entitled “Actual holding times for refrigerated liquefied gases”.

### At 4.3.5, amend new provision TU42 to read:

“The actual holding time shall be determined for each journey of a tank ~~containers and demountable tanks~~ carrying a refrigerated liquefied gas on the basis of the following:

- (a) The reference holding time for the refrigerated liquefied gas to be carried (see 6.8.3.4.17Q) as indicated on the plate referred to in 6.8.3.5.4;
- (b) The actual filling density;
- (c) The actual filling pressure;
- (d) The lowest set pressure of pressure limiting device(s).

*NOTE: ISO 21014:2006 ‘Cryogenic vessels – Cryogenic insulation performance’ details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the holding time.*

The date (or time) by which the actual holding time will be exceeded shall be provided on the transport document (see 5.4.1.2.2. (c)).’

Tanks ~~containers and demountable tanks~~ shall not be offered for carriage:

- (e) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;
- (f) When leaking;
- (g) When damaged to such an extent that the integrity of the ~~portable~~ tank or its lifting or securing arrangements may be affected;

- (h) Unless the service equipment has been examined and found to be in good working order;
- (i) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined.
- (j) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time.
- (k) Unless the pressure is steady and has been lowered to a level such that the actual holding time may be achieved<sup>3</sup>.

<sup>3</sup> ~~See EIGA document "Methods to prevent the premature activation of relief devices on tanks" to be made available at [www.eiga.eu](http://www.eiga.eu).~~ Guidance is provided in the European Industrial Gases Association (EIGA) document "Methods to prevent the premature activation of relief devices on tanks" available at [www.eiga.eu](http://www.eiga.eu) <<http://www.eiga.eu>>."

NB For RID this text would appear across the whole page (being applicable to tank wagons and tank containers) and for ADR the text would only appear on the right hand side of the page (being applicable only to tank containers).

**Add 5.4.1.2.2(c) in ADR to read:**

"In the case of tank containers carrying refrigerated liquefied gases the consignor shall enter in the transport document the date (or time) by which the actual holding time will be exceeded."

**For RID only, amend 5.4.1.2.2. (c) to read:**

"In the case of tank wagons and tank containers carrying refrigerated liquefied gases the consignor shall enter in the transport document the date (or time) by which the actual holding time will be exceeded."

**Add the following to the end of 6.8.3.2 15:**

For type testing of the effectiveness of the insulation system, see 6.8.3.4.11.

**Amend the new text for 6.8.3.4 to read:**

*"Holding times for ~~containers and demountable~~ tanks carrying refrigerated liquefied gases*

6.8.3.4.10~~7~~ The reference holding time for ~~tank containers and demountable~~ tanks carrying refrigerated liquefied gases shall be determined on the basis of the following:

- (a) The effectiveness of the insulation system, determined in accordance with 6.8.3.4.18~~1~~;
- (b) The lowest set pressure of the pressure limiting device(s);
- (c) The initial filling conditions;
- (d) An assumed ambient temperature of 30 °C;

- (e) The physical properties of the individual refrigerated liquefied gas intended to be carried.

6.8.3.4.18~~1~~ The effectiveness of the insulation system (heat influx in watts) shall be determined by type testing the ~~tank containers and demountable~~ tanks. This test shall consist of either:

- (a) A constant pressure test (for example at atmospheric pressure) when the loss of refrigerated liquefied gas is measured over a period of time; or  
(b) A closed system test when the rise in pressure in the shell is measured over a period of time.

When performing the constant pressure test, variations in atmospheric pressure shall be taken into account. When performing either tests corrections shall be made for any variation of the ambient temperature from the assumed ambient temperature reference value of 30 °C.

**NOTE-1:** ISO 21014:2006 'Cryogenic vessels — Cryogenic insulation performance' details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the reference holding time.

## **Renumber the existing paragraphs from 6.8.3.4.10 to 6.8.3.4.16**

### **Add new text to 6.8.3.5.4, underlined:**

6.8.3.5.4 On ~~tank containers and demountable~~ tanks intended for the carriage of refrigerated liquefied gases:

- the maximum working pressure allowed.
- reference holding time (in days or hours)<sup>13</sup>
- initial pressure (in bar gauge or kPa gauge)<sup>13</sup>

As regards formatting, the introductory sentence to 6.8.3.5.4 should remain unchanged, but in relation to the two new indents and the text for 6.8.3.2.15, new 6.8.3.4.10 and 6.8.3.4.11, for RID the text would appear across the whole page (being applicable to tank wagons and tank containers) and for ADR the text would only appear on the right hand side of the page (being applicable only to tank containers). Footnote 13 should appear against both new indents (NB a different numbering system is used in RID).

### **For RID only, add new 1.6.3.xx to read:**

“1.6.3.xx Tank wagons for refrigerated liquefied gases constructed before 1 July 2015 in accordance with the requirements in force up to 31 December 2014 but which do not however conform to the requirements of 6.8.3.2.10, 6.8.3.2.11 and 6.8.3.5.4 applicable from 1 January 2015 may continue to be used until the next periodic inspection after 1 July 2015. Until this time, to meet the requirements of TU42 of 4.3.5 and 5.4.1.2.2(c), the actual holding times may be estimated without recourse to the reference holding time.”

**For RID and ADR, add new 1.6.4. yy to read:**

“1.6.4.yy Tank containers for refrigerated liquefied gases constructed before 1 July 2015 in accordance with the requirements in force up to 31 December 2014 but which do not however conform to the requirements of 6.8.3.4.170, 6.8.3.4.118 and 6.8.3.5.4 applicable from 1 January 2015 may continue to be used until the next periodic inspection after 1 July 2015. Until this time to meet the requirements of TU42 of 4.3.5 and 5.4.1.2.2(c), the actual holding times may be estimated without recourse to the reference holding time.”

---