

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**

17 September 2021

Geneva, 21 September – 1 October 2021

Item 2 of the provisional agenda

Tanks

Tanks: Feed-back on the Ad-hoc working group on automatic closing stop-valves on connections to the vapour phase on cryogenic tanks carrying flammable gases (LNG/LH2)

Transmitted by the Chair of the Ad-hoc working group

1. The Chair of the ad-hoc working group regrets to notify that it was not possible to find a suitable time and date for an initial meeting with appropriate participation. The inability to find the date is due to a more than full meeting agenda for most experts and the holiday season. A new poll for a suitable date will be sent shortly, for the October/November 2021 period. Experts that wish to attend but have not received the poll may contact Mr. Webb (WEBBAP@airproducts.com).

2. The purpose of the ad-hoc working group is to discuss issues concerning the amendment of the regulation to clarify that also for cryogenic tanks carrying flammable or toxic gases connections in the top of the tank, above the liquid phase, shall be provided with an instant closing stop-valve as close as possible to the tank that will or can be closed automatically in the event of an emergency. For example, emergencies are leakage due to unintended movement or fire situations, where the outflow of gases should be able to be stopped automatically or by remote control. However only those connections that could be used in handling the substances (filling/discharge) should be affected.

3. As far as it is known, no refrigerated liquefied poisonous gases are assigned to an UN number in the table A of Chapter 3.2. This means that only two refrigerated liquefied flammable gases are expected to be affected, LNG (UN 1972) and Hydrogen (UN 1966).

4. Tanks according to chapter 6.8 for the carriage of LNG that circulate in reasonable numbers are in most cases provided with an automatic closing device on these openings, however some are not. As this is a safety item, they should be modified requiring a transitional measure.

5. Tanks for the carriage of refrigerated liquefied hydrogen circulate in limited numbers. These tanks are not equipped with such a device, and due to the difference in operation, the requirement for the valves will be part of the evaluation. Besides this, it is expected that the majority of tanks are approved as “Portable tanks” or based on local DOT (USA) requirements. Should there be a requirement to fit the valves for refrigerated liquefied hydrogen, new tanks can be reasonably simply equipped with these stop-valves. Modification of existing tanks is more complex because the valves are vacuum insulated due to the very low transport temperature of -253 °C, and space is limited. This modification and limited number of tanks may call for a different transitional measure than for LNG. The possible growth of the carriage of refrigerated liquefied hydrogen over the coming years and handling at less remote industrial places make this the best time to clarify the regulations.

6. Because chapter 6.7 should be amended as well, it is felt that the issue should also be discussed at the UNTDG meetings. However, it is also felt that at the same time a clarification should be given to chapter 6.8. for newly constructed tanks. An option for this could be to introduce a new tank special instruction to UN 1966 and UN 1972 and consequential transitional measures.

7. Proposals:

In 6.8.4 (b) Items of equipment (TE) insert a new special provision TE to read as follows:

"TE_{xy}: Connections of the tank in the vapour phase that are intended for the handling (filling/discharge) of flammable refrigerated liquefied gases shall be seen as filling and discharge openings and be equipped with an instant closing automatic stop valve as close as possible to the tank."

In Chapter 1.6 insert a new transitional measure 1.6.3.x/1.6.4.y to read as follows:

"Fixed tanks (tank-vehicles) and demountable tanks / tank-containers constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not, however, meet the requirements of Special Provision TE_{xy} of 6.8.4 (b) may continue to be used for UN 1966 and may continue to be used until the first periodic inspection according to 6.8.3.4.6 is performed for UN 1972."
