

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

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Tanks

12 February 2020

Interpretation of subsection 6.8.3.2.3 in ADR

Transmitted by the Government of the Netherlands

Introduction

1. For tanks intended for the carriage of liquefied flammable and toxic gases, the internal stop valve of filling and discharge lines shall close automatically in case of unintended movement of the tank or fire or operate by remote control.
2. Recently there was a discussion concerning a tank-container of a new approved type for the carriage of Liquefied Natural Gas (LNG). In comparison with earlier approved tank-containers for this purpose, the automatic controlled valve on the opening into the vapour phase was no longer fitted (just deleted and no longer 3 closures in series).
3. The discussion focused on the interpretation if this opening into the vapour phase is to be seen as filling or discharge line?
4. However, subsection 6.8.3.2.3 in ADR confirms, at least for road tankers, that filling lines into the vapour phase have to comply with the requirement for automatic closing valves and give, by the exemption, the possibility to use non-return valves. Although not applicable to tank-containers it gives direction.
5. Regardless of any interpretation of wording and from a safety point of view, the automatic/remote closing function should apply to all valves used (open) during handling, including those ending in the vapor phase. It should always be possible to stop the outflow of gaseous methane in case of emergency such as unintended movement or fire.

Interpretation

6. Question 1:

Is the opening in the vapour phase of LNG tanks to be seen as filling or discharge opening?

7. Question 2:

Shall the opening in the vapour phase of LNG tanks close automatically in case of unintended movement of fire?

8. Question 3:

Shall this “opening” be equipped with 3 closures in series?

Background

9. Carriage of refrigerated Liquefied Natural Gas (LNG) is not new but increasing in volume and movements. In earlier times refrigerated gases were “air gases” that were not flammable and this function would be less important.

10. For the future the application for refrigerated liquefied hydrogen may be foreseen where outflow of hydrogen during handling will increase the risk of a fire.
 11. The opening in the vapour phase is used for pre-cooling the tank before filling but also for reduction of pressure during loading and pressurizing during discharge.
 12. From the industry, it was understood that during handling this opening is actually connected to the terminal. In this respect it should be seen as an opening for filling and discharge to which the requirements for automatic closing apply.
 13. Chapter 6.7 of ADR follows the same approach as Chapter 6.8 of ADR for refrigerated gases. It should be noted that for under pressure liquefied gases all openings, with exemption of those for manholes, safety valves and openings with a diameter of more than 1.5 mm, shall be equipped with 3 closures in series (according to subsection 6.7.3.5.2 of ADR) suggesting that these lines should all be filling or discharge lines.
 14. However, subsection 6.7.3.5.4 of ADR mentions specifically “Filling and discharge lines” so that this may lead to discussion if all lines are used for filling/discharge.
 15. As the risk of the outflow of gas of unintended movement of the tank or fire is identical between under pressure liquefied gas as refrigerated liquefied gas the degree of safety measures should be identical.
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