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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

Geneva, 17–27 September 2013

Item 2 of the provisional agenda

Tanks

Vacuum-operated waste tanks

Transmitted by the Government of France^{1, 2}

Summary

Executive summary: This proposal seeks to clarify the provisions to *protect* vacuum-operated waste tanks against the risk of fire or explosion during bottom-discharge or bottom-filling.

Action to be taken: Amend 6.10.3.8 (b).

Related documents: ECE/TRANS/WP.15/AC.1/2013/12 and ECE/TRANS/WP.15/AC.1/130/Add.1, item 6.

¹ In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para.106, ECE/TRANS/2010/8, programme activity 02.7 (c)).

² Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2013/36.

Introduction

1. During the March 2013 session, the Joint Meeting adopted the following amendments proposed by the Working Group on Tanks on the basis of the proposal transmitted by Germany in document ECE/TRANS/WP.15/AC.1/2013/12 on vacuum-operated waste tanks:

6.10.3.8 The tanks shall be fitted with the following additional service equipment:

(...)

- (b) A device to prevent the immediate passage of flame shall be fitted to both the inlet and outlet of a vacuum pump/exhauster unit which *may provide a source of ignition* and which is fitted on a tank used for the carriage of flammable wastes *or the tank shall be explosion pressure shock resistant, which means being capable of withstanding without leakage, but allowing deformation, an explosion resulting from the passage of the flame.*

2. The proposal of Germany sought to introduce into 6.10.3.8 (b) of RID/ADR an alternative to the obligation to mount flame arresters on the inlet and outlet of vacuum pump/exhauster units (compressors) which *may provide a source of ignition* on tanks used for the carriage of flammable wastes. The proposed alternative consisted in constructing a tank capable of withstanding an internal explosion without leakage.

3. The alternative proposal protects the tank itself; however, during bottom-discharge or bottom-filling, when the pump or compressor is in operation, the tank discharge pipe is linked to the stationary vessel by means of flexible pipes. In this case, in the absence of a flame arrester, security against the risk of explosion is ensured in terms of the tank but not at the flexible discharge pipe or the stationary vessel.

4. This situation seems very dangerous, particularly for the users. If an explosion generated by sparks from the pump or compressor were to occur, the effects would be:

- Explosion of the flexible discharge pipes with projection of the product that could hit the user and cause serious burns;
- The possible propagation of the explosion to the stationary vessel if the latter is not constructed to withstand an internal explosion.

5. The absence of flame arresters on the inlet and outlet of vacuum pump/exhauster units on tanks used for the carriage of flammable substances creates a serious risk of fire or explosion, particularly during bottom-discharge or bottom-filling, and so we think that these requirements in RID/ADR should not be amended.

Proposal

6. Amend 6.10.3.8 as follows:
- 6.10.3.8 The tanks shall be fitted with the following additional service equipment:
- (...)
- (b) A device to prevent the immediate passage of flame shall be fitted to both the inlet and outlet of a vacuum pump/exhauster unit which *may provide a source of ignition* and which is fitted on a tank used for the carriage of flammable wastes;
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