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Working Party on the Transport of Dangerous Goods
(Geneva, 13-23 September 2005)

PROPOSAL OF AMENDMENTS TO RID/ADR

Part 6 of RID/ADR

Chapter 6.8

Transmitted by the Government of Norway

SUMMARY

Executive Summary: Based on a serious incident involving fire in tank wagons carrying UN 1978 Propane, Norway proposes changes to the requirements regarding use of safety valves and thermal insulation for such tanks.

Action to be taken: Change the text in 6.8.2.2.9 and 6.8.3.2.14.

Related documents: None.

Introduction

On 5 April 2000, a goods train carrying, among other goods, two tank wagons containing UN 1978 Propane ran into a stationary train at the railway station in the town of Lillestrøm,

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Norway. Due to overrunning of the bumpers, the ends of the two tanks came in contact with each other. Since the two cars were positioned in the train so that the manhole covers in the tank ends were facing each other, two bolts were severed on each manhole cover, and propane leaked. The leaking gas caught fire almost immediately.

It soon became evident that there was imminent risk of a BLEVE if the tanks were not sufficiently cooled down. 2000 people were evacuated and the town centre, as well as the main railway tracks out of Oslo, were closed off for more than three days. The governmentally appointed commission that investigated the accident supported this action on the basis of the investigations and analyses that have been carried out after the accident.

According to the report of the Commission, a catastrophe the likes of which have not been seen in Norway in peacetime was probably less than an hour away when the fire services started cooling down the tanks. This was not done without problems, since the average temperature during the incident was around -10 °C, causing problems with the water supply. It has to be pointed out that this is not a particularly low temperature for the season, and that if the accident had happened in more “wintery” parts of the country, the cooling down of the tanks may not have been feasible!

According to the fire services involved in cooling the tanks, the presence of sun shields presented a problem in directing water towards the parts of the tanks that needed cooling down. Furthermore, the lack of safety valves on the tanks influenced the decision to evacuate the area in a decisive way.

The Commission made a number of recommendations to various national authorities on how to minimize the risks from such accidents in the future, among which were the requirement for safety valves to be installed on all tank wagons for flammable gas, not only on nationally approved wagons, and the removal of sun shields from such wagons. They also advocated the insulation of such tanks to reduce the heating up of nearby tank wagons from tanks on fire. The latter will be an automatic result from removing the possibility to use sun shields as an alternative for insulation on tanks, were such measures are deemed necessary, so this recommendation is not carried forward as a separate proposal. Norway will make the necessary proposal to the UNSCETDG for changes to 6.7.3.2.12 if proposal No. 3 is adopted.

Proposals

1. Change the word “may” in the first sentence of 6.8.3.2.9 to “shall”.
2. Alternatively, the first two sentences of 6.8.3.2.9 should read. “ Tanks intended for the carriage of compressed or liquefied or dissolved gases of classification codes 1F, 1TF, 1TFC, 2F, 2TF, 2TFC, 3F and 4F shall be fitted with spring loaded safety valves. Tanks for other compressed or liquefied or dissolved gases may be fitted with such valves.” The rest remains unchanged.

3. Change the text of 6.8.3.2.14 to read: “ If tanks intended for the carriage of liquefied gases are equipped with thermal insulation, such insulation shall consist of a complete cladding, of adequate thickness, of insulating material.”

Justification

For proposals 1 and 2, the justification lies in the fact that not requiring safety valves on tanks containing flammable gases may create a situation when such tanks are involved in fires that may lead to catastrophic results (i.e. BLEVEs). Such valves are required in the UN Recommendations for the transport of Dangerous Goods, as well as in the IMDG Code. The proposed changes will not only enhance safety, but will also lead to a harmonization with the UN Recommendations and the IMDG Code.

Proposal No. 3 is justified by the fact that sun shields represent a hindrance for emergency services when they apply water to cool down tanks with flammable gases involved in a fire to avoid BLEVEs or other similar dangerous reactions.

Safety implications

Introducing the proposed changes will enhance the safety.

Feasibility

The introduction of the proposed changes should not cause problems for new tanks, since these will be in accordance with the UNRTDG and the IMDG Code in this respect. Since most existing European RID/ADR tanks today are built in accordance with the present regulations of RID and ADR, an appropriate transitional measure must be put in place to take care of these tanks. Such a transitional measure might read:

“1.6.3.x Tank wagons/Fixed tanks (tank vehicles) and demountable tanks constructed before [1 January 2007] in accordance with the requirements in force up to [31 December 2006] but which do not, however, conform to the requirements of 6.8.3.2.9 and 6.8.3.2.14 as applicable from [1 January 2007] may still be used.”

Enforceability

No problem of enforceability is foreseen.

Consequential amendments

If either proposal 1 or 2 is adopted, 6.8.3.2.10 has to be deleted.
