

## **Economic Commission for Europe**

### **Inland Transport Committee**

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

**10 September 2014**

#### **Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods**

Geneva, 15-19 September 2014

Item 6 of the provisional agenda

#### **Reports of informal working groups**

### **Comments and position of UIP regarding ECE/TRANS/WP.15/AC.1/2014/53 (Netherlands) Inf.8 (Netherlands) Inf.9 (Netherlands) Inf.25 (AEGPL/LPG)**

#### **Transmitted by International Union of Wagon Keepers (UIP)**

### **Background**

The a. m. documents represent the current status of the discussion of the „Working group on the reduction of the risk of a BLEVE“.

The document ECE/TRANS/WP.15/AC.1/2014/53 (Netherlands) summarizes the results of the last meeting of the working group regarding the reduction of the risks of a BLEVE and asks in item 11 the Joint Meeting to decide in principle to include a „requirement in ADR/RID for thermal protection of rail/road transport tanks with the objective of being able to resist in a complete fire engulfment for at least 60 minutes“.

Inf.25 by AEGPL describes in detail the critical items regarding “Thermal Protection” which are still open.

### **Position of UIP**

Generally UIP supports the line of argumentation of AEGPL in Inf Paper 25. At the moment UIP as well does not see sufficient grounds for a decision in principle to require “Thermal Protection” as a measure to prevent BLEVEs.

Apart from the risk analysis which was not carried out sufficiently to evaluate the requirement for tanks being able to resist 60 min. in a complete fire engulfment and the missing cost-benefit analysis we see especially from technical point of view big disadvantages of “Thermal Protection”. From UIP point of view these are especially the following points:

1. Missing technical requirements (Standards) regarding the coating material itself as well as the application to container/tank.
2. No operational experience regarding the ageing process and its impact on the protection and safety of vehicles (Negative experience at rail cars in the US, occurrence of cracks in such thermal protection systems).

3. No operational experience regarding mechanical stability/reliability of material under normal operating conditions as well as in case of accident.
4. Negative effect in case of necessary cooling of tank in case of fire. Already in case of minor mechanical damage of the coating material (i. e. in case of a derailed or overturned rail tank car) the effect to prevent the tank from heat input is annulled. The Thermal Protection applied to the vessel makes surface cooling of the tank by the fire brigades with water impossible.
5. Difficult if not impossible inspection of tank during the course of periodic container testing because the outside of the tank cannot be visually inspected any more.
6. Danger of unnoticed corrosion underneath the coating.
7. Missing of a substantial risk evaluation and a cost-benefit analysis, also under the aspect of renewal periods.
8. Loss of loading capacity due to weight increase leads to increase of transports and thus higher potential risk of accident.

On 14.08.2013 in Varna (Bulgaria) a BLEVE occurred at a rail tank car for LPG transport.

The BLEVE was caused by the fact that although the fire brigade arrived promptly at the site of the accident they neither tried to extinguish the fire nor did they cool down effectively the still burning tank with water.

It is questionable to what extent the explosion of this rail tank car could have been prevented, because no fire fighting measures or safety measure were executed at the tank.

Besides tests from BAM have shown negative influence of PRV. The radiation of heat, when the valve is activated in a fire, can lead to shorten the time period of withstanding of the tank immensely. This because the strenght of the steel in the area with heat input caused by the burning blown of gas, will be decreased.

Additionally, linked to the big dimensions of rail tank wagons, huge cross section of PRV would be necessary to blow of the gas in case of accident in appropriate volume. This means at least 2-3 PRV will be needed on each tank, where each one is another potential source for malfunction as well as for leakages.

## Summary

- UIP supports the Inf 25 document of AEGPL
- UIP does not have knowledge of a BLEVE accident in the rail sector that would have been prevented by such a “Thermal Protection” or the effect would have been reduced.
- Especially for railway the mounting of PRV seems to be critical
- The above mentioned technical issues show precisely the problems linked to the Thermal Protection of tanks.
- At the moment UIP does not see any sufficient basis to require „Thermal Protection“ in ADR/RID.

This is the reason why we ask the Joint Meeting not to accept the application of the Netherlands and not to include any principle requirements for „Thermal Protection“ in ADR/RID.