

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous GoodsJoint Meeting of the RID Safety Committee and the
Working Party on the Transport of Dangerous Goods
(Geneva, 13-23 September 2005)

Comments to document TRANS/WP.15/AC.1/2005/43

Transmitted by the AEGPL (Association Européenne des Gaz Liquéfiés)

Document TRANS/WP.15/AC.1/2005/43 argues that the sun shield on the railcars increases the risk of a BLEVE by reducing the ability to get cooling water on the leaking railcars and proposes changes to the requirements regarding use of safety valves (6.8.2.2.9) and thermal insulation (6.8.3.2.14):

- 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.
- Sun shields can not be used anymore for tanks intended for the carriage of liquefied gases: only a complete cladding of insulating material may be used.

For AEGPL sun shields do not increase the risk of a BLEVE for the following reasons.

Sun shields prevent direct flame impingement.

For the protected part of the tanks no flames occur, and the temperature between tanks and sun shields is an average of tank temperature and sun shield temperature (= sprinkling water temperature), so no additional heat transfer to the tank takes place here.

A test in scale 1:100 with a steel pipe (= tank) and a thin steel plate (= sun shield) was carried by BP Gas A/S and confirmed it.

Moreover in the same time that sun shields prevent direct flame impingement, water cooling can be applied to the rest of the vessels so that the total frigorific contribution is constant whereas heat absorbed by tanks is reduced.

If sun shields are destroyed by flame impingement having protected the vessel for some time, water can then be used to divert any jet flame.

On the other side a thermal insulation reduces considerably water cooling efficiency.

This might be damageable in case of flame impinging a damaged insulation area as water cooling would be inefficient on insulated area.

AEGPL therefore proposes not to forbid sun shields and to keep unchanged the requirements concerning safety valves.