

Meeting Minutes  
LNG TASK FORCE  
15 April 2013  
United Nations  
Palais Nations

There was no formal agenda for the meeting. Rather the group met to address questions and concerns that delegates for GRSG and any other stakeholders might have regarding the LNG amendments being proposed to GRSG in advance of the GRSG meeting later in the afternoon.

**I. Welcome and Introductions**

1. Mr. Dijkhof lead the introductions of the participants at the meeting.

**II. Background to the LNG TF**

2. Work has been ongoing since 2011. The first documents were submitted to GRSG in 2012 and today and tomorrow we will be discussing the formal document to amend R.110 in order to introduce LNG components and fuel systems in the scope.
3. Today we will review the questions raised by the French delegates and the answers provided to them.

**III. Review of the French Questions of the amendments (please refer to document GRSG 104-33e)**

4. *Question 1a. Concerns about overfill protection.* Overfilling is not possible. When the tank is full it is full. Some of the safety technology is on the filling station and not the vehicle and, as such, is not in the jurisdiction of the GRSG. Plus, there are safety pressure relief valves (PRVs) that can operate if the liquid or gaseous fuel builds up over the predetermined limit. The safety aspect will depend on both fill level and fill pressure. Adding reference to ISO 12991 was seen as a way to overcome the concern and harmonize these regulations.
5. *Question 1b. Mandatory fuel indicator.*  
In this proposed regulation the fuel gauge on the fuel tank is, however, optional since typically there is a fuel gauge in the driver compartment of the vehicle.
6. *Question 2. Consistency between paragraphs 8.4/8.21 (approval requirements for components) and paragraph 18.3.5. (components that may be installed in a LNG system).* It seems that some components (e.g. level gauge) are mentioned in 18.3.5. but not in paragraph 8. As it is required that every component has to be type-approved, we need to have everything in paragraph 8. We should review this and add missing items.
7. *Question 3. Mandatory gas detection on N category vehicles* was harmonized with ISO and regulatory language used for M category vehicles.
8. *Question 4. Why not install "automatic valve" and "PRD temperature triggered for the LNG tank?"* This is a technical 'fix' changing the word 'device' to 'valve', whereas the valve can open and close but the device opens and can no longer be closed (and, therefore, must be replaced).
9. *Question 5. What procedure is used to verify the minimum of 5 days? Why 5 days?* The provisions conform to SAE J2343. If there is concern about these vehicles stored in a closed area then additional ventilation requirements related to building performance is required but this is not really related to vehicle safety and, thus, cannot be regulated within R.110.

10. Question 6: Venting management system. Paragraph 18.6.7 explains how the venting management system should be constructed and should prevent any dangerous situations.

Annex 3B paragraph 2.6 also describes that in case LNG tanks are located in enclosed spaces safety provisions should be taken.

11. *Question 7. Venting management* away from other exterior-mounted systems on the vehicle (such as an air conditioning system.) New language was added specifically to accommodate systems mounted on the exterior of a vehicle that include air intake capability.
12. *Question 8: Annex 7 and 18-1-8 Why not extend identification mark for vehicles of category N?* This is to be in line with the CNG provision in the existing regulation. For CNG the identification mark is also only mandatory. Part 2. 18.1.8.1: addresses labelling of M2 and M3 vehicles. The practice is identical to that for CNG.
13. *Question 9. Optional components: The wording of 18.3.5 should be amended to clearly express that only items mentioned in the following subparagraphs (18.3.5.1 to 18.3.5.7) can be installed in addition to mandatory components, so that any other component is forbidden.* We are addressing only those components listed and cannot determine what additional components might be added in future. At this stage in the development of this regulation and the development of the industry it might be overly restrictive to forbid any components other than those on this list.
14. *Question 10. Risks linked to empty tank: in case where the tank is completely empty, is there a risk to fill it in? If yes, what are the measures foreseen in R110?* No. The fuel connector on the vehicle cannot be compromised by any liquid fuelling system or nozzle. Additionally, and as reported by Mr. Murray, when an LNG tank is fuelled for the first time there is no associated risk. The tank will have a much higher temperature than usual, the LNG being filled will vaporize quickly at the beginning, preventing the tank to be completely filled during the first fuelling, and with no further problems after the vehicle is put into normal operation.
15. *Question 11. Can we have a feedback from countries that already allow the LNG?* A series of case studies were taken from existing presentations made in Europe and North America (Informal document 104-32.) Safety concerns do not come up as an issue throughout any of the cases, including those customers with many multiple vehicles and having experience for many years. Now is the time to adopt the proposed regulations for LNG fuel systems so the market can continue to grow, but with a new element of safety.
16. Discussion about styles of enforcing regulations in various countries, noting difference using Notified Bodies in Europe but in the US the use of (for fuel tanks, for example) having the presence of federal government inspectors at the manufacturing plants.

#### **IV. Overview of what has been done by the LNG TF to modify R.110.**

17. Some components such as fuelling nozzles and receptacles were not specified because ISO work on this same equipment is not yet completed. Once ISO work is completed the LNG amendments can be updated accordingly. The LNG TF did not want to specify a design for fuelling receptacles in order to take advantage of the relatively transparent work being done by ISO.

18. New Annexes for all LNG components were made.
  19. New Annex 5 was added for cryogenic testing, which is completely different than testing for CNG.
- V. Meeting Close.
- With the review of all the questions posed by the French delegation, the meeting was closed. Mr. Dijkhof thanked all the participants and welcomed their support later in the day at the GRSG meeting.

### **Participants**

Paul Dijkhof, Chairman (KIWA)  
Jeff Seisler (Co-secretariat, NGV Global/Clean Fuels Consulting)  
Jaime Del Alamo (Co-secretariat, NGVA Europe)  
Peter Murray (Chart)  
Jean-Louis Chazalotte (Volvo)  
Abdulaziz Saleh Al-Showair (GCC Standardization Organization, Saudi Arabia)  
Jabr Al-Naimi (Ministry of Environment, Qatar)  
Prashant Banerjee (TATA)