

## **Report on the ANGVA CNG Cylinder Inspection Courses, June 2010**

The ANGVA CNG Cylinder Inspection Course in Bangkok, Thailand and Kuala Lumpur, Malaysia were successfully concluded. The course in Bangkok, Thailand was from 23 – 25<sup>th</sup> June 2010 and the course in Kuala Lumpur was from 28 – 30<sup>th</sup> June 2010.

The 3-Days courses were organised by ANGVA in collaboration with TUV Saarland Automobil GmbH / TUV Rheinland Group, Germany. The trainer for both courses was Mr. Carl Wagner, Senior Expert / Trainer / Certifier from the Competence Center for Alternative Fuels, TUV. The course is designed to train participants to conduct re-inspection of CNG cylinders manufactured to ISO 11349 standard and UN ECE R110 regulations.

The course covered basic understanding of gaseous fuels (Natural gas, Biogas, Liquefied Petroleum Gas and Hydrogen), understanding of Regulations, Standards, Rules and Safety (ISO 11439 Standard and UN ECE R110 and R115 Regulations) and in-depth training on ISO 19078.

The courses were divided into following sections:

- i. Gaseous Fuels Basics.
- ii. ISO Standard 11439 (Gas Cylinders – High Pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles).
- iii. UN ECE R110 - Uniform provisions concerning the approval of: (i) specific components of motor vehicles using Compressed Natural Gas (CNG) in their propulsion system, and (ii) Vehicles with regard to the installation of specific components of an approved type for the use of compressed natural gas (CNG) in their propulsion system.
- iv. UN ECE R115 – Uniform provisions concerning the approval of: (ii) Specific CNG (Compressed Natural Gas) retrofit systems to be installed in motor vehicles for the use of CNG in their propulsion system. This section course is for Gas System Test (GST) and Gas System Installation Test (GSIT) training.
- v. ISO 19078 (Gas Cylinders – Inspection of the cylinder installation and requalification of high pressure cylinders from the on-board storage of natural gas as a fuel for automotive vehicles).

At the end of the courses, participants sit for test to gauge their knowledge and understanding of the materials taught to them.

Thirty four (34) participants (17 from the course in Bangkok, Thailand and 17 from the course in Kuala Lumpur, Malaysia) successfully completed and passed the course and were awarded with Certificate of Achievement issued jointly by TUV and ANGVA. These participants are now qualified to conduct re-inspection of CNG Cylinders manufactured to ISO 11439 and UN ECE R110.

Good feedbacks were received from participants and many felt that the course had increased their knowledge and understanding of CNG cylinders and they are ready to start practicing their skills in re-inspecting CNG cylinders.



Participants of the ANGVA CNG Cylinder Inspection Course, Bangkok, Thailand, 23 – 25<sup>th</sup> June 2010



Participants of the ANGVA CNG Cylinder Inspection Course, Kuala Lumpur, Malaysia, 28 – 30<sup>th</sup> June 2010



Copy of Certificate of Achievement Awarded to Participants of the ANGVA CNG Cylinder Inspection Courses in Bangkok, Thailand (23 – 25<sup>th</sup> June 2010) and Kuala Lumpur, Malaysia (28 – 30<sup>th</sup> June 2010).

ANGVA is happy that the course had been successfully conducted and well received by participants and local authorities in Thailand and Malaysia. There are now better understandings of the need to periodically re-inspect and re-certify CNG Cylinders, and these must be conducted by certified CNG cylinder inspectors.

There are also better understanding between Standards and Regulations. While following ISO standards are voluntary, the following of UN ECE R110 and R115 Regulations would be mandatory for countries that had rectified the United Nations Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts. Thailand and Malaysia are signatories to this Agreement and the 'E' marked for Thailand is E53 and Malaysia is E52.

During the course it was also stressed by the trainer that for the periodic inspection, Hydrostatic Testing of CNG Cylinders make to ISO 11439 and UN ECE R115 are not necessary. CNG cylinders (including its brackets, valves, PRDs and pipings) need to be visually inspected at least every 36 months (under ISO standard) and at least every 48 months (under UN ECE Regulations) according to the guidelines and recommendations of the manufacturers. ISO 19078 can be used for the re-inspection of CNG cylinders; however under ISO 19078 there are also requirements to refer to manufacturers for guidance and recommendations. It was pointed out that under ISO and UN ECE it is the obligation of the CNG Cylinder manufacturers to provide Cylinder Installation and Maintenance Manuals, Cylinder Inspection Recommendation and Guidelines to those purchasing their cylinders.

The trainer also informed that CNG cylinders should not be used after the expiry dates stamped/ labeled on the cylinders. Cylinders with illegible or unclear marking / label should be referred to the manufacturers for advice or recommended to be destroyed.

The importance of conforming to the required Gas Composition for CNG as specified in ISO 11439 was also stressed by the trainer during the course.

ANGVA plan to conduct similar course in countries within the Asia Pacific region if the need arises or if there are requests from the countries concern. Requests to organize this course can be directed to the ANGVA Secretariat office.

ANGVA would like to thank TUV for the collaboration and the following organisations and companies for their supports and sponsorships of the two courses:

### **For Bangkok, Thailand**

1. Thailand Association for Natural Gas Vehicles (TANGV) – Co-organiser.
2. Department of Energy Business, Ministry of Energy, Thailand – Co-organiser.
3. PTT Public Company Limited – Co-organiser.
4. C. Melchers GmbH & Co, Singapore – Sponsor.
5. Sinoma Science & Technology Co., Ltd., China – Sponsor.
6. Youngdo Ind. Co., Ltd., South Korea – Sponsor.
7. ENK Co., Ltd., South Korea – Sponsor.

### **For Kuala Lumpur, Malaysia**

1. Road Transport Department, Malaysia -Supporter.
2. PETRONAS, Malaysia – Sponsor.
3. UMW, Malaysia – Sponsor.
4. Sime Darby Industrial, Malaysia – Sponsor.
5. C. Melchers GmbH & Co, Singapore – Sponsor.
6. Sinoma Science & Technology Co., Ltd., China – Sponsor.
7. Youngdo Ind. Co., Ltd., South Korea – Sponsor.

The supports and sponsorships of the above organisations and companies showed their commitments and responsibilities towards the safety of the NGV industries in Thailand, Malaysia and also in the region. It is hope that many more NGV organisations and companies will support and sponsor safety courses, programmes and initiatives that will be undertaken by ANGVA in the future.

*Reported by: Lee Giok Seng, Executive Director, ANGVA. 5<sup>th</sup> July 2010.*