

MEDEA: Metrology – Enabling Developing Economies in Asia

REPORT FOR TRAINING COURSE ON VERIFICATION OF FUEL DISPENSERS

Dates : 11-13 July 2016

Venue : Holiday Inn, Pattaya City, Thailand

Host : Central Bureau of Weights and Measures, Department of Internal Trade,
Ministry of Commerce, Thailand

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Trainers:

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Mr	Choopol	Nopporn	Trainer	Thailand	mynokky@hotmail.com
Mr	Latosa	Jose Marco	Trainer	Philippines	marcolatosa@yahoo.com
Mr	Muy	Samrach	Trainer	Cambodia	samrachmuy@yahoo.com
Ms	Pisankul	Pisakorn	Trainer	Thailand	pisakorn@dit.go.th

1. Objective of the Training

This training course was designed to follow-up a recommendation from a Verification of Fuel Dispensers training course which was delivered in Pattaya City, Thailand in 2015. The objective of this course was to involve trainers from developing Asian economies with the support of a more experienced trainer to provide training to participants from developing Asian economies who verify fuel dispensers, or who have a responsibility for ensuring that fuel dispensers are verified in accordance with OIML recommendations. All course participants were expected to have had practical experience in the field. This training was composed of lectures and practical activities. The lectures outlined the test procedures and the reference standards of measurement used to test a fuel dispenser to ensure it is operating correctly and delivering fuel within the maximum permissible error. The practical component included a demonstration of how to test a fuel dispenser in the field and provided an opportunity for participants to demonstrate their ability to test a fuel dispenser in accordance with OIML recommendations.

This course provided participants with the knowledge and skills to:

- understand the role of trade measurement within an economy
- identify the major components of a fuel dispenser
- analyse the fuel dispenser's operating environment to determine how it could impact on its performance
- identify sources of any possible operational error
- verify a fuel dispenser in accordance with the test procedures and workplace health and safety guidelines

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2. Target Group

The target group for this training course was participants:

- from developing economies within Asia;
- experienced in the verification of fuel dispensers; and
- willing to train others when they return to their economy, or at future APLMF training courses.

3. Description of the Training Course

MEDEA is a four year project managed by Physikalisch Technische Bundesanstalt (PTB) and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) which aims to foster and further develop the capabilities of the Asia Pacific Metrology Programme (APMP) and the Asia Pacific Legal Metrology Forum (APLMF) to support developing economies in the Asia-Pacific region.

The project aims to improve the ability of the regional metrology specialist networks in Asia to:

- promote metrology systems within developing economies; and
- strengthen the metrology systems/infrastructure of their respective members from developing economies.

The APLMF has responsibility for the work package APLMF1. This consists of eleven training courses that will be provided over a three year period. The Verification of Fuel Dispensers is one of these training courses.

Prior to the commencement of the training course, the trainers and participants were provided access to Google Drive. The Verification of Fuel Dispensers Course in Pattaya City was the APLMF's pilot in deploying Google Drive to provide training materials and administrative documents which can be easily accessed by Secretariat personnel on the ground at training courses. Also, the trainers were asked to upload training materials to the drive to enable the participants to view and print materials before the course. It was hoped that this approach would improve the training experience for all involved, particularly the participants as they would have the opportunity to pre-read materials allowing them to come to the course better prepared. The APLMF Secretariat Phil Sorrell met with Brad Larter from National Measurement Institute Australia on the day prior to the three day training course commencing to ensure the meeting room was set up appropriately. The training room and facilities were both of a high standard.

The training course was formally opened by Mr Suchat Sinrat, Deputy Director General, from the Department of Internal Trade. The APLMF Secretariat Phil Sorrell welcomed everyone and wished them a very successful week. A full list of participants can be found in Annex 2. In addition to the 17 official participants, Thailand had an additional 6 of observers present during the training.

Following introductions and an overview of the course, each economy provided a report explaining how their economy regulates fuel dispensers. This information has been collated and is shown in Annex 3. Not all economies are OIML compliant and many admit there is a lack of appropriate resources to maintain an effective legal metrology framework. Some economies also highlighted a

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lack of appropriate regulation to ensure a successful system of legal metrology. Everyone seemed to learn something new during the training.

The methodology adopted for this training course is one where the theory component of the course is delivered during day one and two and on the third day the course participants are provided an opportunity to gain practical experience in the verification of fuel dispensers. Throughout the three day training course participants were encouraged to ask questions to clarify their understanding. Many of these questions related to practical problems they had in the field. A number of the participants communicated throughout the training course that software control and a lack of type approval system were causes of concern for their economy. Where software was not an issue there were controls in place, or large oil companies managing the software to ensure there was a degree of confidence that there was no fraud.

On day one Jose Marco Lactosa from Industrial Technology Development Institute of Philippines presented training on the requirements of working safely with petroleum products and the traceability of reference standards. Jose Marco Lactosa was very confident in his communication and his training session was well received. On day two Samrach Muy from National Metrology Center of Cambodia delivered training relating to the preparation and equipment requirements for testing fuel dispensers, followed by the elements of completing a visual inspection of a fuel dispenser. During Samrach Muy's training session, the participants were more engaged and participated by answering questions that were asked of them. As previous course participants, Samrach Muy and Jose Marco Lactosa both communicated their knowledge clearly and demonstrated an ability to engage with the course participants.

On day three, all participants were taken to Junpen PTT Sriracha Co. Ltd petrol service station in Sriracha, Chonburi province to gain practical experience in the verification of fuel dispensers using the test procedures presented. The two trainers from Thailand Pisakorn Pisankul and Nopporn Choopol assisted in the practical demonstrations and supervision of the participants at the service station. Pisakorn Pisankul and Nopporn Choopol initially demonstrated the correct method for testing a fuel dispenser to all participants and throughout the day they worked alongside the course participants in groups of two to provide them with an opportunity to test the fuel dispenser individually. As previous course participants experienced in delivering practical training, Pisakorn Pisankul and Nopporn Choopol were very competent and confidently answered questions asked by the course participants.

4. Highlights/ Lessons Learned

All the objectives of the training were met, with all planned activities detailed in the program being successfully completed. The trainers from Thailand, Cambodia and Philippines all demonstrated a high level of competence as trainers and were able to support the needs of the participants. During the final day of the training course, the participants practically demonstrated fuel dispenser verification and they understood the test procedures. All candidates participated well and were very willing to be involved in the group exercises.

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The target group for the program was generally correct and many of the candidates were young enthusiastic participants who learnt quickly. However, there were some older participants and some participants who had high level positions within their institutes. Previous experience has highlighted that the ideal candidate for the MEDEA program is a new generation or next cohort of managers. As previously identified, the ideal candidate would be a young person with potential to learn and develop new skills and knowledge.

At the conclusion of the training course, the course participants were asked to provide feedback by submitting responses to a survey monkey questionnaire. Overall 66.67% of participants rated the course highly.

The logistics for the course were meticulously provided by the Sakchai Hasamin, Khemsai Rahannok and a number of their colleagues from Thailand. This is supported by feedback from the course participants, of which 91.67% confirmed the logistics were perfect. Of the twelve participants who completed the survey 83.33% gave the highest rating for the preparation and advance information and 58.33% provided the highest rating for the quality of the course materials. It was noted that not all course participants had ready access to the training materials. Some participants accessed the training materials directly from their laptop computers and others had printed versions of the training materials. However the majority of participants did not have ready access to the course training materials and instead relied on simply viewing the PowerPoint presentations which had been prepared by the trainers.

The course participants highlighted the group work and practical field work as being the most effective part of the training. The feedback suggested that there was a need for the duration of the course to be extended to accommodate requests for more group work and practical experience testing fuel dispensers.

On the final day of the training course, there was a very limited amount of time afforded to the participants to be able to prepare and deliver their action plans. During the presentation of their action plans, the majority of the course participants committed to providing their colleagues with further training after returning to their home country.

5. Next Steps/ Follow-up

- Participants to complete the points detailed on their action plans.
- APLMF Secretariat to follow-up within 6, and 12 months to record the progress against the action plans
- Trainers to be available to answer questions.

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Annex 1: Workshop Program

Monday 11 July Venue: Holiday Inn Pattaya		
Time	Details	Presenter
08:30 – 09:00	Registration	Host
09:00 – 09:40	Welcoming address from the host economy Opening ceremony (APLMF Secretariat) Group photo taking	APLMF and Host
09:40 – 10:00	Introduction	APLMF and Host
10:00 – 10:45	Overview of the course Economy reports - explains how fuel dispensers are verified in each economy	APLMF and a trainee from each economy
10:45 – 11:15	Coffee Break	
11:15 – 12:30	Economy reports continue	APLMF and a trainee from each economy
12:30 – 14:00	Lunch break	
14:00 – 15:30	Working safely with petroleum products Construction of a fuel dispenser	Marco Latosa
15:30 – 16:00	Coffee break	
16:00 – 17:00	Traceability	Marco Latosa
18:00 – 20:00	Welcome dinner	Host

Tuesday 12 July Venue: Holiday Inn Pattaya		
Time	Details	Presenter
09:00 – 10:30	Preparation for testing Equipment for testing petrol and diesel	Samrach Muy
10:30 – 11:00	Coffee Break	
11:00 – 12:30	Visual Inspection Functional Tests	Samrach Muy
12:30 – 14:00	Lunch	
14:00 – 15:30	Performance Tests	Pisakorn Pisankul Nopporn Choopol
15:30 – 16:00	Coffee Break	
16:00 – 17:00	Question and answer session	All trainers

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Wednesday 13 July Venue: A Petrol Station		
Time	Details	Presenter
08:20	Travel to the training venue	
09:00 – 10:30	Observe demonstration of individual tests Group discussion of procedures	Pisakorn Pisankul Nopporn Choopol
10:30 – 11:00	Coffee Break	
11:00 – 12:30	Students practice technique in small groups Participants work together to answer test questions	All trainers
12:30 – 14:00	Lunch	
14:00 – 15:00	Each student demonstrates the procedure of testing a fuel dispenser Participants work together to answer test questions	All trainers
15:00 – 16:00	Travel back to hotel	
16:15 – 17:00	Action Plans – Presentations	All trainers

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Annex 2: List of Participants

Title	Family name	Given name	Institute	Economy	Email Address
Mr	Rahman	Mohammad Shaifur	Bangladesh Standards and Testing Institute	Bangladesh	shaifur.itsb@gmail.com
Mr	Kamruszaman	MD	Bangladesh Standards and Testing Institute	Bangladesh	zamanbsti@gmail.com
Mr	Wangchuk	Namgay	Bhutan Standards Bureau	Bhutan	namwangz2013@gmail.com
Mr	Phorn	Rattanak	National Metrology Center, Ministry of Industry and Handicraft	Cambodia	rattanakdolvt@gmail.com
Mr	Vieng	Somann	National Metrology Center, Ministry of Industry and Handicraft	Cambodia	viengsomann@gmail.com
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Ms	Pratami	Mutya	Directorate Metrologi	Indonesia	pramtya1139@gmail.com
Ms	Wan Nur Fara Shimma	Daud	Ministry of Domestic Trade, Cooperative and Consumerism, Enforcement Division	Malaysia	nurfara@kpdnkk.gov.my
Ms	Batsuuri	Amartuvshin	Mongolian Agency for Standardization and Metrology	Mongolia	amartuvshin@masm.gov.mn

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Title	Family name	Given name	Institute	Economy	Email Address
Mr	Ojha	Kamal	Nepal Bureau of Standards and Metrology	Nepal	ojhakamal@yahoo.com
Mr	Crucero	Cedric	Industrial Technology Development Institute, NML	Philippines	cedcrucero@gmail.com
Mr	Vovovon	Sylvester	National Institute of Standards and Industrial Technology	Papua New Guinea	sylvester.vovovon@nisit.gov.pg
Mr	Senaweera	Lalith	Measurement Units, Standard and Services Department	Sri Lanka	lalitnishantha718@gmail.com
Mr	Ariyapala	Ambalakande	Measurement Units, Standard and Services Department	Sri Lanka	ariyapala@gmail.com
Mr	T.Watthanaphon	Rueangsiri	Central Bureau of Weights and Measures	Thailand	taro26111@hotmail.com
Mr	Kongsilt	Chanecharkrit	Northern Weights and Measures Center (Chiang Mai)	Thailand	chanecharkrit@gmail.com
Mr	Bui Trung	Dung	Directorate of standards, metrology and quality	Vietnam	dungchihang@gmail.com

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Annex 3: Summary Economy Report

Summary of Economy reports									
Economy	Legislation	SI	MPE used %	Inspector of 3 rd pty	Verification periods	OIML compliant	Type approval	Issues	Other
Bangladesh	Yes	Yes	0.3	Inspector	1 Year	Yes	Yes	Lack of resources	
Bhutan	Yes	Yes	0.5	Inspector	1 Year	Yes	Yes	No legal metrology system	
Cambodia	Yes	Yes	0.5 Initial 1.0 subsequent	Inspector	1 Year	Yes	No	Resources including officers and budget Public awareness	
Indonesia	Yes	Yes	0.5	Regional responsibility	1 Year	Not fully adopted	Yes		
Malaysia	Yes	Yes	0.5	Verification officers – Licensee	Periodic 1 Year	Yes	Yes		
Mongolia	Yes	Yes	0.5	Inspector	6 Months	Unsure	Yes		
Nepal	Yes	Yes (no legal req)	+0.5 -0.25	Inspector	1 Year	No	No	Tampering Lack of training	
Philippines	Yes	Yes	0.5	Local government NML	2 Months	Not yet working towards	No		
Papua New Guinea (NIST)	Yes (ICCC is regulator)	Yes	Price only	Inspector (ICCC)	1 Year	Yes	No	Conflict between regulators	

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Summary of Economy reports									
Economy	Legislation	SI	MPE used %	Inspector of 3 rd party	Verification periods	OIML compliant	Type approval	Issues	Other
Sri Lanka	Yes	Yes	+0.5 -0.25	Inspector	2 Years	Yes usually	Yes	Lack of resources and knowledge	
Thailand	Yes	Yes	Variable Up to 2L 5mL	Inspector or licensee	1 Year	Yes	No		
Vietnam	Yes	Yes	0.3	Inspector or licenced verifiers		Yes	Yes	No regulation regarding maintenance	

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Summary of Action Plans				
Title	Surname	First Name	Economy	Action Plans
Mr	Rahman	Mohammad Shaifur	Bangladesh	Look at reviewing verification procedures and implement additional tests.
Mr	Kamruszaman	MD	Bangladesh	
Mr	Wangchuk	Namgay	Bhutan	Train staff on verification procedures and examine process with review of legislation.
Mr	Phorn	Rattanak	Cambodia	Implement training in Cambodia and have meeting with all petrol station owners to discuss the benefits of fuel dispenser verification.
Mr	Vieng	Somann	Cambodia	
Mr	Budiman	Firmansyah	Indonesia	
Ms	Pratami	Mutya	Indonesia	Share knowledge with colleagues & improve understanding of issues with software.
Ms	Wan Nur Fara Shimma	Daud	Malaysia	Share knowledge with inspectors and verification officers.
Ms	Batsuuri	Amartuvshin	Mongolia	Study English to improve future understanding.
Mr	Ojha	Kamal	Nepal	Look at systems for pattern approval & verification certificates
Mr	Crucero	Cedric	Philippines	Disseminate knowledge to colleagues
Mr	Vovovon	Sylvester	Papua New Guinea	Update procedure. Consult with previous participant from ICCC and train
Mr	Senaweera	Lalith	Sri Lanka	Share experience amongst staff & train inspectors and oil company rep
Mr	Ariyapala	Ambalakande	Sri Lanka	
Mr	T.Watthanaphon	Rueangsiri	Thailand	Train colleagues on tests for fuel dispensers verification learned from this course.
Mr	Kongsilt	Chanekarkrit	Thailand	1.Transfer of knowledge and experience from training to colleagues. 2.Study the possibility of bringing knowledge and experienced in Training Course to application and develops in Verification of Fuel Dispensers.
Mr	Bui Trung	Dung	Vietnam	Review current MPEs

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Suggestions:

- PNG suggested language barriers make it difficult to interact and participate fully
- A number of suggestions for more practical-based training
- More awareness amongst trainers of language barriers
- More than 3 days training

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