

Workshop Report

Establishing of Refrigerant Reclaim Centres in Sri Lanka

at
Ceylon German Technical Training Institute,
Moratuwa

3-5 November 2014



Organized by

National Ozone Unit
State Ministry of Environment, Sri Lanka

In collaboration with

ASADA Corporation of Japan

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Background

Refrigerants are found in devices such as refrigerators, air conditioners, central air conditioning systems (HVAC), freezers, and dehumidifiers. When these units are serviced, there is a risk that refrigerant gas will be vented into the atmosphere and it cause for the depletion of the ozone layer. Most of the halogenated refrigerants have high Global Warming Potential (GWP). Therefore, venting of such refrigerants contribute for global warming too. In cases where appliances which contain refrigerant are being serviced or disposed of, it is necessary to extract the refrigerant first from a system and the placement of that refrigerant into a container. The recovery process is conducted whenever technicians need to open or dispose of air conditioning or refrigeration equipment.

Reclamation of Refrigerant involves purifying of used refrigerant to virgin condition. Reclamation requires initial chemical (laboratory) analysis of the used refrigerant in order to identify bad or mixed refrigerants which could result in equipment damage or leakage. Reclamation is recommended when used refrigerants will be charged into equipment other than the equipment it was removed from, and required if charged into equipment owned by a different company. Non-reclaimable refrigerants must be disposed of in an environmentally acceptable manner, and in accordance with applicable regulations.

There are many environmental and economic benefits gained from recovery, recycling and reclamation efforts worldwide.

- Minimized atmospheric emissions and reduced environmental impact
- Expanded market opportunity for used refrigerant
- Reduced environmental compliance costs
- Reduced need for new refrigerant
- Increased lifetime of refrigeration equipment due to contaminant removal

Effective recovery, recycling and reclamation of used refrigerants greatly reduce the emission in the refrigeration and air conditioning industries so that they can be reprocessed for further commercial use or destroyed. Hydrofluorocarbons (HFCs) also can be recovered, recycled and reclaimed from many applications, including mobile air conditioning, stationary air conditioning and refrigeration.

Refrigerant recovery and reuse program design

Recovered HCFCs from service workshops

- recovered gas stored and sent for reclamation



Reclamation of gas for reuse

- operations on cost recovery basis
- quality as per ARI-700 standards
- quantities reclaimed monitored

The mini-reclaim centers

NOU has programmed to establish eight mini-reclaim centers at selected Technical or Vocational Training Centres covering all parts of the country and each centre will be provided with one set of refrigerant mini-reclaim unit, four sets of refrigerant recovery units and set of accessories and tools, Technical assistance and training for operating the equipment and process management. The mini-reclaim centers will be operated on a commercial basis.

Since, supply of HCFCs is expected to be restricted through import controls introduced by the phase-out schedule. Reclamation process is expected to be commercially attractive to service technicians.

It is proposed that the small air conditioning service shops and independent air conditioning technicians be provided with recovery units, accessories and tools on lending basis, so that in addition to reducing HCFC emissions in servicing through better practices, recovery of refrigerants in servicing would be promoted. The activities under the project would be detailed out in a detailed project implementation plan and aligned with the national policy and regulatory framework for HPMP implementation. Indicative estimates of quantity of recovered and reclaimed would be about 15-20 MT per annum. This would also vary with the type of equipment serviced.

Objectives

- The main objective of this workshop is to exchange ideas, as well as to build the capacity of hand on skills of recovery units, accessories and tools on lending basis.
- Enhance capacity building technician's theoretical and hand-on session

Methodology

Considering the geographical disposition and size of Sri Lanka and consumption intensity which relates to number of service centers, it is proposed that 8 mini-reclaim centers to be located among the following places keeping in mind the mini-reclaim centers would also be provided and placed in high consumption pockets to ensure that logistics costs associated with bringing recovered HCFCs and reclaiming at the reclamation centers are minimized.

NOU, in collaboration with Ceylon German Technical Training Institute (CGTTI) had organized a 3 day training programme for Ref/AC instructors attached to the aforementioned training centres and few other instructors who would be benefitted from this training. Equipment supplier ASADA Corporation of Japan sent a Training Specialist to train on equipment.

- 1. Ceylon German Technical Training Institute (CGTTI) - Western Province**
- 2. College of Technology, Kandy - Central Province**
- 3. College of Technology, Batticaloa - Eastern Province**
- 4. College of Technology, Badulla - Uva Province**
- 5. College of Technology, Galle - Southern Province**
- 6. Vocational Training Authority - Vavunia - North Central/Vanni**
- 7. Wayamba Technical Institute, Kurunegala - Wayamba**

Resource Person

Mr. Ishigami Masanori – Training Engineer, ASADA Corporation

Participants

Out of the selected 26 participants in Technicians program;



Important Events



Welcome Speech



Introductory Session



Audience



Theory Session



Demonstrations