

# **ST KITTS AND NEVIS REFRIGERATION AND AIR-CONDITIONING SAFETY STANDARDS CODE**

National Ozone Unit  
St. Kitts and Nevis

# BACKGROUND

- ❖ Signatories to the Montreal Protocol (10th August 1992),
- ❖ the London Amendment (8th July 1998),
- ❖ the Copenhagen Amendment (8th July, 1998), Montreal Amendment (25th February 1999),
- ❖ Beijing Amendment (8th January, 2009).
- ❖ Refrigeration Management Plan (1999 – 2003),
- ❖ Terminal Phase-out Management Plan (2003 – 2011)
- ❖ HCFC Phase-out Management Plan (2012 – 2020).
- ❖ 100% Phased out of CFCs by 1<sup>st</sup> January 2008

# REFRIGERATION AND AIR- CONDITIONING SECTOR

- ▶ 75-90 Refrigeration and Air-conditioning technicians
- ▶ 5-10 new technicians each year who complete the 2 yr. training programme at the CFB College
- ▶ 34 persons completed 2 day training in hydrocarbon technology, April, 2013
- ▶ 12 person completed a comprehensive one week training course on Hydrocarbons conducted in October, 2013

# PURPOSE

- ▶ The main purpose of the safety standards is to guide RAC service technicians on the best practices for the installation and servicing of refrigeration and air-conditioning systems charged with HC refrigerants.
- ▶ The safety standards were prepared in the style of a Code for St Kitts and Nevis and the content is based on the Country's National requirements, International obligations and was prepared in conjunction with the recommendations of experts provided by UNEP.


# RATIONALE

- ▶ The Code is intended for RAC service technicians who have already been trained and those who are targeted for training under the HCFC Phase-out Management Plan (HPMP) of St Kitts and Nevis.
- ▶ The Code seeks to provide preliminary and practical information to RAC service technicians for application in the field during the installation and servicing of refrigeration and air-conditioning systems charged with HC refrigerants.
- ▶ The Code is therefore intended to be used only by persons with the appropriate technical skills and training.

# DESIGN

- ▶ The Code is designed to be easily understandable and user friendly. It will be prepared in two distinct styles.
  - The current version which is a 61 page comprehensive document (to be used as a training manual and desk reference)
  - A practical field version which is currently being prepared. This version would feature larger print, more descriptive diagrams, more pictures and considerably less instructive script
- ▶ The main objective of the Code was to promote the best installation and servicing practices for Hydrocarbons
- ▶ The Code was formulated on the premise that technicians and engineers would have a readily accessible means of educating themselves on the fundamental safety standards relevant to the RAC industry

# PROCESS

- ▶ Contracted the Consultants
  - ▶ Met with Daniel Colbourne
    - ▶ Provided guidance on the elements of the document
    - ▶ Met with some members of the Refrigeration and Air-conditioning sector
  - ▶ Drafted the Document
  - ▶ Document sent out for review
  - ▶ Completed Final Document
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# FORMAT

- ▶ Part A: Rules of Application
- ▶ Part B: Hydrocarbon Refrigerant Handling Practices



# RULES OF APPLICATION

- ▶ Introduction to safe design for HC refrigerants
- ▶ Minimisation of leakage
- ▶ Occupancy categories
- ▶ Refrigerant charge size limits
- ▶ Electrical sources of ignition and hot surfaces
- ▶ Installations outside
- ▶ Machinery rooms, ventilation and gas detection
- ▶ Refrigeration pipework
- ▶ Chilled water/brine pipework
- ▶ Pressure safety devices
- ▶ Marking and signage
- ▶ Manuals and other instructions

# HC REFRIGERANT HANDLING PRACTICES

- ▶ Risk assessment/general precautions for working/routine system checks
- ▶ Considerations affecting conversions
- ▶ Accessing a refrigerant circuit
- ▶ Refrigerant recovery
- ▶ Refrigerant venting
- ▶ Leak checking (for tightness testing) and gas detection
- ▶ Repair of leaks
- ▶ System evacuation
- ▶ Charging
- ▶ Repairs to electrical components
- ▶ Cylinder handling, storage and transport
- ▶ Marking and documentation

# CONSTRAINTS AND LESSONS LEARNT

- ▶ Time frame to complete the consultative process was too short
  - ▶ Consultants needed more time to complete the second part of the document and fully engage the sector

# Thank You

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