I. JOB TITLE : REFRIGERATION/AIR-CONDITIONING/ VENTILATION MECHANIC

II. JOB LEVEL : SKILLED WORKER

III. JOB DESCRIPTION : Fits, assembles, installs, commissions, maintains and repairs air-conditioning and refrigeration systems including refrigerating, air-handling and ventilation equipment and the associated electrical controls.

IV. TRADE SKILLS : Ability to:

1. Correctly use and maintain the tools of the trade including power tools, test equipment and measuring instruments.

2. Use electric and gas welding equipment, perform simple machining and fabrication operations.

3. Install, test, maintain and repair plant components such as electrical controls, electrical drive equipment, timing devices, expansion valves, thermostats and pressure switches, compressors, condensers, heat-exchangers, fans, pumps, shafts and keys, belts and couplings, and other associated components.

4. Install, test, maintain and repair air-handling plants including ducting fan coils and ventilating fans.

5. Install, test, maintain and repair piping for refrigerant, chilled water, condenser, cooling water and steam systems.

6. Install, test, maintain and repair air-conditioning and ventilation equipment related to fire services systems.

7. Locate and repair faults in refrigeration/ air-conditioning/ventilation systems, plants and equipment.

8. Read and interpret simple refrigeration/ air-conditioning/ventilation specifications, building plans, refrigeration and electrical circuit diagrams.

9. Use approved mechanical handling and lifting equipment.

10. Use safety equipment, and protective devices and equipment.

11. Correctly instruct, supervise and transfer skills to any apprentice and semi-skilled worker assigned to him to ensure safety and quality of work.

V. TRADE THEORY : Knowledge of:

1. Basic refrigeration / air-conditioning / ventilation technology including:

   (i) Refrigeration cycles

   (ii) Fans, pumps, compressors and related accessories

2. Basic workshop practice, engineering materials, welding and wiring.

3. Line and wiring diagrams and layout drawings for refrigeration/air-conditioning/ventilation systems.

4. Thermal and acoustic insulating materials and techniques.

5. Electrical devices including motors and their control gears.

6. Relevant control components and systems.

7. Use of test equipment and measuring instruments.

8. Standards and requirements of air-conditioning and ventilation equipment related to fire services systems.

9. Industrial hazards, safety and health precautions, energy saving and environmental concerns.

10. Installation practice and regulations, and relevant codes of practice.

11. Relevant ordinances and regulations.

VI. ENTRY ROUTE : Preferred Minimum Entry Qualification:

Completion of Secondary 3.

Training:

4-year organized apprenticeship or 3-year organized apprenticeship if preceded by a relevant one-year full-time basic craft course, with attendance at a relevant part-time day-release or block-release craft course in an institute of vocational education or equivalent, plus 2 years of post-apprenticeship relevant working experience.