

CRYOGENIC OFFICER**NATURE OF WORK**

This is skilled work in the operation, maintenance and repair of cryogenic equipment for the Department of Physics.

The employee of this class is responsible for the operation, maintenance and repair of cryogenic equipment used in the production of liquid nitrogen and liquid helium. Work also includes the operation of a helium mass spectrometer to detect equipment leaks; maintaining production records; ensuring that appropriate inventory parts and materials are available; and maintaining liaison with internal and external users. The employee is required to exercise a considerable degree of independence in the day-to-day operation and maintenance as well as major maintenance and repair of the system under the direction of the immediate supervisor. Work is reviewed through inspection or discussion and observation of results obtained.

ILLUSTRATIVE EXAMPLES OF WORK

Operates cryogenic equipment in the production of liquid nitrogen and liquid helium; monitors operations to ensure that operating pressures as well as impurity and temperature levels are maintained within appropriate ranges.

Transfers liquid nitrogen and liquid helium from storage containers to transport containers; ensures that necessary safety precautions are taken; schedules production of cryogenic materials to meet consumer requirements.

Performs day-to-day maintenance on equipment by maintaining oil levels, water and gas pressures; checks daily for gas leaks in the helium system; and cleans water filters by reversing water flow.

Performs major maintenance and repairs to cryogenic equipment; participates in annual dismantling, cleaning and oiling of equipment; assists in the identification of equipment breakdown problems and the replacement of parts.

Operates helium mass spectrometer to detect helium leaks in equipment; ensures that equipment is maintained in proper condition; receives requests from faculty and staff to test equipment for leaks and advises of results.

Establishes and maintains a parts inventory system for each type of equipment; ensures that each part is stored in appropriate location; recommends purchase of additional items when required; prepares requisitions for helium gas from local suppliers.

Maintains liaison with customers located within the University and local hospitals; discusses

user requirements and provides advice or assistance in the safe transport of materials.

Maintains records of materials produced, number of containers filled and amounts of gas consumed; prepares reports for invoicing of users.

Maintains work area in a neat and orderly condition.

Performs related work as required.

REQUIREMENTS OF WORK

Experience in the operation, maintenance and repair of cryogenic or related equipment; graduation from high school supplemented by the successful completion of approved apprenticeship programs in refrigeration and air conditioning as well as mechanics; or any equivalent combination of experience and training which provides the following knowledge, abilities and skills:

Considerable knowledge of the characteristics and properties of cryogenic gases.

Considerable knowledge of the operation, maintenance and repair of cryogenic equipment.

Considerable knowledge of the hazards and safety precautions involved in the work.

Ability to establish and maintain appropriate records.

Ability to understand and follow complex oral and written instructions.

Ability to work with mechanical equipment.

Ability to establish and maintain effective working relationships with faculty members, staff, research personnel and outside customers.

Skill in the operation of a variety of mechanical devices.

Skill in the care and use of test equipment and tools.

Possession of a journeyman certificate in refrigeration and air conditioning as well as in mechanics issued by the Province of Newfoundland and Labrador.

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Confirmed: 2004.01.05