VENTURA COUNTY COMMUNITY COLLEGE DISTRICT

CLASS TITLE: HVAC&R TECHNICIAN

BASIC FUNCTION:

Under the general supervision of a Maintenance Supervisor or an Operations Supervisor, a HVAC&R (Heating, Venting, Air Conditioning, and Refrigeration) Technician performs journey-level mechanical work in the maintenance and operation of a variety of heating, air conditioning, ventilation, and refrigeration systems, equipment, and controls, including computerized energy management control systems and chemical and mechanical water treatment equipment.

REPRESENTATIVE DUTIES:

Service, maintain, calibrate, adjust, inspect, diagnose, and repair HVAC&R equipment including heating, ventilation, compressed air, air conditioning, and refrigeration equipment such as boilers, cooling towers, water chillers, pumps, freezers, refrigerators, air conveyance systems, gas heaters, and complex hydronics systems using direct digital or analog control devices and timing switches.

Troubleshoot, repair, and maintain computer-operated direct digital control (DDC) energy management control systems, Automated Logic Controls, building automation and control networks, and related proprietary software.

Monitor and adjust levels of fluids/gasses in HVAC&R filters, lines, valves, and control components; utilize refrigerant scales and vapor recovery units to add and remove Freon from air conditioning units; pressure test centrifugal compressors using EPA approved methods to find and stop leaks and evacuate, store and replace refrigerants; repair purge compressors on centrifugal chillers.

Ensure compliance with applicable federal, state and local laws, rules, and regulations in the purchase, use, and containment of hazardous materials, fluids, and gases; maintain accurate records of Freon movement; submit records to federal Environmental Protection Agency representatives as requested; maintain service records.

Perform electrical, pneumatic, and mechanical testing of equipment including computerized timing switches; diagnose mechanical and electrical problems; repair or replace defective parts in units and equipment and controls; calibrate and adjust thermostats.

Rebuild pressure and temperature safety valves, water pumps, air conditioning compressors, and air compressors.

Determine proper system operation using control and ladder diagrams, schematics, blueprints, and HVAC electrical wiring diagrams.

Perform brazing, soldering, and welding.

Locate and acquire parts necessary for repair and maintenance of HVAC&R related equipment.

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HVAC&R TECHNICIAN (continued)

Provide work direction to others as assigned.

Assist or perform other skilled maintenance duties as assigned.

Perform related duties as assigned.

KNOWLEDGE AND ABILITIES:

KNOWLEDGE OF:

Manual, pneumatic and electrical equipment applicable to HVAC&R trade, including boilers, cooling towers, pumps, freezers, refrigerators, refrigerant recovery systems, air handlers, exhaust air units, makeup air units, duct air conveyance systems, variable air volume systems, multi-zone units, electrical power and control circuits, analog and digital time clocks, gas piping, condensate pumps and drain lines, fan coil units, condensing units, unit heaters, fan forced heaters, hot water heating systems, gas fired hot water boilers, gas furnaces, and complex hydronics systems

Water chiller operation and maintenance (including reciprocating, scroll, and screw types)
Methods of calibrating and adjusting thermostats, valves, and controls
Propriety software used in building automation and control networks (e.g., Carrier, Trane, and York)
Central processing units with analog and digital inputs/outputs, transducers, thermistors, electric and electronic dampers, and valve actuators
Direct digital control and computerized timing switches used in energy management systems
Current laws, rules, and regulations related to pertaining to the heating and air conditioning trade
Building, fire, health, and safety codes
Methods of adjusting and combining fluids and gases
Safety precautions related to hazardous or toxic materials
Interpersonal skills using tact, patience, and courtesy
Welding and soldering techniques
Methods and use of test equipment
Modern industrial and commercial building construction pertaining to the heating and air conditioning trade
Principles of solar energy in heating and air conditioning systems
Record-keeping techniques

ABILITY TO:

Perform skilled maintenance duties applicable to the HVAC&R trade including complex emergency repairs
Diagnose and correct electronic, electro-mechanical, electrical, and mechanical malfunctions
Use a variety of tools and machines utilized in the HVAC&R trade, such as combustion meters, electrical meters, refrigerant manifold gauges, charging charts, micron gauges, refrigerant electronic leak detectors, infrared temperature testers, electronic temperature testers, manometers, air balancing test equipment, electronic refrigerant charging scales, propane, MAPP, and oxy/acetylene torches, and hand and power tools
Read, interpret, and work from blueprints, shop drawings, schematics, diagrams, sketches, and specifications
Work independently with little direction
HVAC&R TECHNICIAN (continued)

Plan and organize work
Follow oral and written instructions
Perform heavy manual labor
Operate a motor vehicle
Analyze situations accurately and adopt effective courses of action
Learn and adapt characteristics of new technologies to the heating and air conditioning trade
Communicate technical concepts effectively, both orally and in writing

EDUCATION AND EXPERIENCE:

Any combination equivalent to: graduation from high school or evidence of equivalent educational proficiency and four years of journey-level experience in the heating and air conditioning trade, including the use of computer-controlled energy management systems and building automation and control units. Completion of an HVACR apprenticeship training program or similar training may substitute for up to one year of the required experience.

LICENSES AND OTHER REQUIREMENTS:

Valid Class C California Driver License
Possession of a valid EPA-approved refrigerant recovery certification, Universal level, in accordance with EPA Rule 608, Clean Air Act
Pass an asbestos medical examination in compliance with the General Industry Safety Orders, section 5208, Title 8 of the California Administrative Codes

WORKING CONDITIONS:

ENVIRONMENT:

Exposure to temperature extremes
Indoor and outdoor environment
Driving a vehicle to conduct work

PHYSICAL ABILITIES:

Lifting and carrying heavy objects
Pushing and pulling equipment
Dexterity of hands and fingers to operate specialized tools
Bending at the waist
Reaching overhead, above the shoulders and horizontally
Kneeling or crouching
Vision to distinguish color

HAZARDS:

Exposure to electrical power supply and high voltage
Exposure to hazardous materials such as Freon and associated acids
HVAC&R TECHNICIAN (continued)

- Working around and with machinery having moving parts
- Climbing ladders and stairs and working from heights