



FACILITY ENERGY TECHNICIAN 3

4034

GENERAL DESCRIPTION OF CLASS

The FACILITY ENERGY TECHNICIAN 3 does advanced journey level work to design, install, operate, maintain, repair and integrate multifaceted energy systems that generate heat, ventilation, air conditioning (HVAC/R) and refrigeration in state buildings and facilities.

DISTINGUISHING FEATURES

This class is the third level of a four-level classification series. The Facility Energy Technician 3 is distinguished from the Facility Energy Technician 1 and 2 by the design, installation and integration of multiple components of HVAC/R systems and the responsibility to assist in Computer Controlled HVAC/R systems operation and maintenance.

The Facility Energy Technician 3 is distinguished from the Facility Energy Technician 4 by the absence of responsibility for Computer Controlled HVAC/R systems design, development, installation, and overall administration.

DUTIES AND RESPONSIBILITIES

The duties listed are characteristic of the type and level of work associated with this class. Individual positions may do all or some combination of the duties listed as well as other related duties.

1. Boiler Operation and Monitoring

Fire high pressure boilers. Troubleshoot all boiler safety devices and controls and repair or replace. Adjust fuel / air mixture to meet Department of Environmental Quality (DEQ) standards. Prepare boilers for inspection by state inspectors. Tear down, clean, flush and reassemble boilers after inspections. Conduct water samples on boilers, domestic water systems, wells and chillers. Adjust chemical injection pumps and chlorination equipment to make sure boiler water chemistry is correct and water is safe to drink. Determine blow down requirements. Analyze boiler load and place additional boilers in operation to maintain load. Do combustion analysis and tuning of boiler controls to maintain efficiency. Operate and maintain steam distribution and condensate return systems and related components including pumps, isolation valves, pressure reducing stations, steam traps and thermal control valves. Repair and replace motors, fans, pumps, valves and all auxiliary steam equipment in distribution network. Operate, Maintain and repair air compressors and emergency generators.

2. Heating, Ventilation and Air Conditioning (HVAC)

Design, install, repair and troubleshoot HVAC systems to maintain temperature, pressure and humidity. Install, alter, maintain and repair pneumatic control systems and components such as sub masters, recalls, zone reset selectors, thermostats and sensors. Install, alter, repair and maintain electrical sensors, data acquisition panels, direct digital controls and communication trunks. Diagnose and introduce custom control actions through application software as part of the preventative maintenance program. Check, adjust and calibrate environmental controls. Examine existing HVAC/R systems and make recommendations for renovations. Renovate and upgrade HVAC/R systems and control systems to accommodate new technology and energy conservation. Plan and coordinate activities during system shutdowns. Prepare job estimates, records of tests, inspections, repairs and equipment replacement. Order supplies, maintain inventory and train other employees on technical information so they can do maintenance on HVAC and control systems.

Assist with installing and configuring Computer Controlled HVAC/R systems in state facilities by installing control panels, running conduit, pulling wire and making final connections to controllers, relays, pneumatic/electronic interfaces, and communications networks in building remodels. Troubleshoot and maintain laboratory Computer Controlled HVAC/R Systems control systems to provide the required negative space pressures, air pressures, air changes, and fume hood flows to satisfy environmental and worker safety regulations while maintaining tenant comfort. Monitor all Computer Controlled HVAC/R Systems and building energy management systems to detect any problem areas related to temperature control in state buildings and facilities.

Assist with retrofitting existing outdated or malfunctioning pneumatic or outdated Computer Controlled HVAC/R Systems with new systems. Maintain real time trending system for archiving building systems data for troubleshooting, customer relations, and energy savings purposes. Do preventative maintenance and calibration of temperature, carbon dioxide, carbon monoxide, and pressure sensors.

3. Refrigeration

Design, build, install, maintain and repair commercial and domestic refrigerators, fans, freezers, walk-in freezers, window air conditioners and other types of HVAC/R equipment. Charge systems with refrigerant, test coils, valves and connections to make sure the system is leak proof and properly adjusted. Solders or weld refrigeration equipment and related components. Do filed maintenance or repair on stationary units and portable units. Operate electrical motors and pumps used in temperature controlled systems. Inspect and trouble shoot heating and ventilation systems to make sure they are operating properly and that the pumps, belts, fans and motors are in working order. Take inventory of equipment and supplies. Requisition equipment and supplies. Operate, maintain and repair giant absorbent chillers.

The duties listed below are for positions that work with adult or youth inmate workers:

Some employees coordinate work flow and assign work to adult or youth inmate workers. Employees direct inmates to follow rules, policies, procedures and security guidelines; instruct and train inmates on work techniques and procedures, and in safe and efficient operations of tools and equipment. Employees evaluate inmate work performance; search inmates and area for contraband; verify and sign inmate time cards; monitor work area for cleanliness and order; and direct inmates in cleaning methods.

RELATIONSHIPS WITH OTHERS

Employees in this class are in daily contact with a variety of people including agency staff, students, patients, inmates, or agency clients in person or by telephone to complete assigned tasks. Employees are in occasional contact by phone with manufacturer representatives, consultants and engineering firms to obtain technical information, and with equipment vendors to order parts as needed. Employees are also in daily contact with other trades employees to coordinate and control installation with other construction-related activities. Employees may direct, instruct and coordinate adult and youth inmate work crews

SUPERVISION RECEIVED

Employees in this class receive work assignments and general supervision from a technical or administrative supervisor. The supervisor or manager assigns work orally or through a written job order which may include control diagrams, blueprints, or maintenance instructions. Employees work independently. The supervisor review work in progress or upon completion for quality and compliance with standards.

KNOWLEDGE AND SKILLS (KS)**Extensive knowledge of:**

HVAC/R and physical plant systems (all components and how they work together as one system) in large buildings.
Refrigeration processes and equipment, as related to large building HVAC/R systems.
Computer Controlled HVAC/R System processes and equipment, as related to large building HVAC/R systems.
Heating processes and equipment (steam & hot water boilers, electric strip heat, etc.).
Pneumatic and electrical controls as they relate to HVAC/R systems.
Computers, communications networking and related software used in the control of HVAC/R systems.

General knowledge of:

Standard practices, methods, tools and materials used in the refrigeration and controls trade.
Internal operation of refrigerators, freezers, water heaters, air conditioners and other types of heating and cooling equipment.
Hazards and safety precautions of the HVAC/R and refrigeration trades.
Computer Controlled HVAC/R Systems, Pneumatic and electrical control systems as they relate to HVAC/R and refrigeration system.
Electrical motors and pumps of the HVAC/R and refrigeration trades.

Basic knowledge of:

Electronic heating and cooling systems.
HVAC/R application software used to repair and maintain HVAC/R equipment.
Electronic heating and cooling systems related to HVAC/R and refrigeration.

Skill to:

Maintain and repair commercial or domestic refrigerators, freezers, and air conditioners.
Locate and repair defects in HVAC/R electrical control and refrigeration equipments.
Use the tools and equipment required of the HVAC/R and refrigeration trades.
Read schematic control diagrams, and interpret control programming language, related to HVAC/R and refrigeration.
Read blueprints and work from sketches related to HVAC/R and refrigeration.
Operate, maintain, and repair large chillers.
Create trends to use in troubleshooting processes.
Maintain and repair Computer Controlled HVAC/R Systems and related communications networks.

NOTE: The KNOWLEDGE and SKILLS are required for initial consideration. Some duties performed by positions in this class may require different KS's. No attempt is made to describe every KS required for **all** positions in this class. Additional KS requirements will be explained on the recruiting announcement.

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Revised

STATE OF OREGON
 Dept. of Administrative Services
 Human Resource Services Division