



## FACILITY ENERGY TECHNICIAN 1

4032

### GENERAL DESCRIPTION OF CLASS

The FACILITY ENERGY TECHNICIAN 1 does semi-skilled work to operate, maintain and repair low pressure steam boilers or heating, ventilation, air conditioning and refrigeration (HVAC/R) systems in state buildings and facilities.

### DISTINGUISHING FEATURES

This class is the first level in a four-level classification series.

The Facility Energy Technician 1 is distinguished from the Facility Energy Technician 2 by the absence of tasks that include the operation and maintenance of high pressure boilers or journey level maintenance, calibration and installation of components in the HVAC/R and physical plant systems.

### 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

Operate and monitor low pressure stationary steam boilers and auxiliary steam equipment, such as pumps and compressors to maintain steam at proper pressure. Maintain daily operation log. Clean boilers and other tanks used in boiler operation.

Monitor automatic gas and feed systems, draft control, fire boiler control system, high and low feed water controls, safety valves and associated safety devices by verifying proper operation of equipment. Operate, check and clean electric driver feed water pumps and chemical pumps. Operate emergency generators to maintain electrical power to boiler plant in case of power failures.

Sample boiler water, water softener and chill water. Analyze chemical contents from water samples and add proper chemical treatments through chemical injection pumps to maintain proper water parameters.

Inspect and correct oil and grease levels in boilers. Clean and service filters and fuel oil strainers. Remove unburnable materials from the boiler. Inspect and maintain air compressors and pneumatic controls. Do safety inspections and annual boiler and pressure vessel safety tests. Repair valves, steam traps, pipe lines, pipe coverings, boiler steam pumps, electric pumps, feed water controls and air compressors. Repair and replace pipes. Lubricate motors and fans, replace drive belts and clean equipment and surrounding areas. Assist with installation, retrofitting and fabrication of new equipment and components using electrical, welding and plumbing methods in order to update the system or replace worn parts.

#### 2. Heating, Ventilation and Air Conditioning (HVAC)

Monitor and repair heating and ventilation equipment such as steam pressure, temperature, pumps, air compressors, natural gas supply and steam distribution equipment. Change filters and replace v-belts. Grease, oil, and lubricate bearings, pumps, motors, fans, and exhaust systems. Clean heat coils, air filtration systems and visually inspect HVAC/R equipment for proper operation. Report malfunctioning equipment to supervisor or lead worker.

Respond to equipment malfunction calls and troubleshoot problems. Contact warranty vendors for repair arrangements. Calibrate environmental temperature, pressure and humidity control components. Complete and retain maintenance reports on all HVAC/R/R equipment and inventory of parts. Initiate Request for Purchase of repair parts and inventory restocking. Prepare job estimates. File records of tests, inspections, repairs and equipment replacements.

Operate and maintain fluid and electronic testing and measuring instruments such as manometers, air flow and liquid flow meters, volt meters, ammeters and potentiometers. Operate a variety of tools such as drill presses, welders, sheet metal tools, grinders, band saws, hand drills, testers soldering guns and small hand tools.

### **3. Refrigeration**

Grease, oil, and lubricate fans, pumps and motors. Replace filters, belts, gauges and thermometers. Clean coils, evaporators, condensers, cooling towers, heat exchangers, chillers, and tube bundles. Monitor and document temperature, pressures, oil levels and operation of equipment. Log and report equipment malfunctions and abnormalities.

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

Employees coordinate work flow and assign work to adult or youth inmate workers. They 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. 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. They work independently with work reviewed in progress or upon completion for quality and compliance with standards.

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

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| HVAC/R theories such as refrigeration processes, steam/hot water boiler systems operation ventilation systems.   |
| Mechanical theory related to HVAC/R.   |
| Electrical theory related to HVAC/R.   |
| Tools needed to do HVAC/R work.  |
| Safety practices of HVAC/R work.   |
| State and local building code requirements related to building energy equipment.                                 |
| Pneumatic electrical and electronic controls related to the building energy trade.                               |
| Operating flow measurement devices used in the boiler industry.  |
| Processes for boiler water chemistry for steam and hot water heating systems.                                    |
| Operational procedures of high pressure steam boiler systems and auxiliary equipment.                            |
| Operational procedures for maintaining boiler systems.   |
| Internal operation of boilers and steam equipment.   |
| Operational procedures for electrical motors and pumps related to facility energy.                               |
| Reading control charts and operating gauges related to boiler systems.   |
| Safety practices in the operation and maintenance of high pressure steam boiler systems and auxiliary equipment. |

**Skill to:**

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| Use tools, materials, and equipment related to the repair and maintenance of HVAC/R and Physical plant systems in State facilities. |
| Read and interpret logic diagrams, schematics, written operational sequences, and blueprints related to boiler systems.             |
| Locate defects, adjust, repair, install, and maintain boiler systems and equipment.   |
| Operate and maintain low or high pressure boiler systems.   |
| Maintain and repair pumps and compressors related to boiler systems.  |

**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