

Nothing in this job description restricts management's right to assign or reassign duties and responsibilities to this job at any time.

DUTIES Serves as HVAC Operator-in-Charge (OIC) in the Utilities Section of the Utilities Division of the Engineering and Maintenance Department at Washington Dulles International Airport (IAD), Metropolitan Washington Airports Authority, (Airports Authority). As OIC ensures safe and efficient operation of IAD's high temperature and pressure hot-water boilers (up to 50 million BTUs, 300-pounds pressure, 380° F water), up to 2000-ton chillers, 1000-ton thermal ice making machines, roof-top heat pumps, electric or gas-fed heaters, air handlers, etc., located throughout the Airport and coordinates the resolution of problems related to utilities systems when in charge in the Utility Building or in the terminals during the evening, night, and weekend shifts (80 percent of time). Works with HVAC Mechanics performing HVAC repairs or preventive maintenance during the day shift (20 percent of time). Performs related functions.

As OIC in Utility Building

Receives all after-business-hours trouble calls and takes appropriate actions, e.g., for complaint that the temperature of a hold room is uncomfortable, would use computer to review point log of room and might give computer commands to open/close valves, start/stop motor, etc.; however, if the computer shows the temperatures and pressure sensors to be within range, would request an HVAC Utility Operator in the terminal and/or other buildings to physically visit site, investigate problem, and take corrective action, as needed.

Records readings of meters and gauges on high-pressure boilers, chillers, thermo ice-storage machines, and control panels periodically. Based on readings, adjusts controls as needed, e.g., adjusts temperature control to heat water to 380° F, opens valves to add nitrogen or relieve excessive pressure, etc. Upon notification from gas company concerning need to curtail consumption, switches boilers from gas to oil and notifies supervisor of the request. Restarts boilers and chillers after power outages, relights gas heaters, turns water back on, etc. Advises Supervisor when major malfunctions occur or safety controls are not operating properly.

Responds to miscellaneous alarm panels for electrical and water distribution systems, e.g., notifies Interior Electrician that alarm is coming from a particular vault. Works closely with the Fire Department and contractors before they fill up fire truck with water from a fire hydrant (otherwise, the alarm panel might indicate a water break).

Trains new employees on the proper operation of the Central Heating and Cooling Plant and distribution system, as directed by Supervisor.

As OIC in Terminals and Other Airport Areas

Makes rounds of various machine rooms to be sure HVAC equipment is operating properly and makes minor repairs or adjustments if needed, e.g., if gauge drops on air-handler indicating that air is not flowing across the filter, may replace filter or manually turn rolled

filter to correct problem; bleeds air from air-locked pumps; tightens loose bolts to stop an oil leak; replaces belts or increases belt tension; etc. Inspects thermal ice storage plants and logs readings appropriately, etc.

Responds to trouble calls referred by the HVAC Operator-in-Charge assigned in the Utility Building. Troubleshoots malfunctioning HVAC equipment and determines the extent of repairs needed; decides what is required to make the equipment operational, whether repairs can be made on the spot or whether other personnel should be called in on overtime to perform the repairs, the urgency of the situation, and the consequences of waiting until the day shift for repairs. Advises the Airport Operations Duty Officer and Supervisor accordingly, e.g., upon failure of high-temperature hot water, chilled water, potable water or gas line closes valves to secure supply, notifies supervisor, and after discussing with Airport Operations Officer, uses overtime list to summon needed and appropriate personnel.

Responds to a variety of trouble calls from Airport Operations Duty Officers and Police, e.g., upends road signs, unstops toilets, etc. Provides assistance and responds to other branches' needs, e.g., assists in setting up emergency light plans and sump pumps. On weekends, performs chemical tests of water and switches from Fairfax water to reservoir water and back again at the appropriate times.

Trains new employees on Airport wide locations of HVAC systems such as machine rooms, roof access hatches, etc.

Day Shift Work as HVAC Mechanic

Records readings of meters and gauges on high-pressure boilers, chillers, thermo ice-storage machines, and control panels. Based on readings, adjusts controls as needed, e.g., adjusts temperature control to heat water to 380° F, opens valves to add nitrogen or relieve excessive pressure, etc. Upon notification from gas company concerning need to curtail consumption, switches boilers from gas to oil and notifies Supervisor of the request. Restarts boilers and chillers after power outages, relights gas heaters, turns water back on, etc. Advises supervisor when major malfunctions occur or safety controls are not operating properly.

Responds to miscellaneous alarm panels for electrical and water distribution systems, e.g., notifies electrician that alarm is coming from a particular vault. Works closely with the Fire Department and contractors before they fill up fire truck with water from a fire hydrant (otherwise, the alarm panel might indicate a water break).

Makes rounds of various machine rooms, as directed, to be sure HVAC equipment is operating properly and makes minor repairs or adjustments if needed, e.g., if gauge drops on air-handler indicating that air is not flowing across the filter, may replace filter or manually turn rolled filter to correct problem; bleeds air from air-locked pumps; tightens loose bolts to stop oil leak; replaces belts or increases tension; etc. Inspects thermal ice storage plants and logs readings appropriately, etc.

Assists mechanics in preventive maintenance and repair of equipment such as air handlers, heat pumps, pumps, and compressors.

Applies the theories, principles, requirements, and standards of the trade and uses the full range of tools of the trade including a wide variety of hand tools and specialized tools and equipment such as: thermometers, manometers, volt-ohm meters, amp probes, wire strippers, squeeze bulbs, dead-weight pressure testers, BTU counters, gas meters, saws, pipe wrenches, soldering equipment, drill press, grinders, punches, etc.

Communicates and interacts effectively with internal and external business contacts including, but not limited to, other members of the unit/team, other Airports Authority employees (such as managers, supervisors, professionals, and support staff), vendors/suppliers/tenants, and Airport users.

Uses a computer and (a) modern office suite software (such as MS Office) to communicate (email); plan; schedule, word process (light word processing); manipulate data; and research (includes Internet use to search for information on HVAC systems); (b) enterprise system/software for requisitioning and other functions, and (c) special systems/software, such as Siemens Apogee used in the performance of DUTIES.

Drives a pick-up truck or other vehicle to inspection sites, the reservoir, and when necessary to respond to trouble calls.

Performs other duties as assigned.

Critical features of this job are described under the headings below. They may be subject to change through reasonable accommodation or otherwise.

MINIMUM QUALIFICATIONS (MQs)

To be rated qualified for this job, an applicant must meet all of the MQs listed below at the time of vacancy announcement closure.

1. A high school diploma, or a Certificate of General Educational Development (GED), or an equivalent combination of education, experience and training.
2. Five years of progressively responsible experience (post high school) in operating, monitoring and/or maintaining central plant heating and cooling systems using high temperature hot water generators (or similar type), industrial chillers and chilled water storage tanks in hot and chilled water production. This includes (a) knowledge of chillers, water levels, water pressure, cooling temperatures, refrigerant pressure-temperature relationship, refrigerant levels and temperatures and refrigerant cycles to maintain safe and efficient operation of cooling equipment and systems; (b) skill in diagnosing operating deviations and corrective steps; (c) knowledge of hot water generators, e.g., nitrogen pressurization system, maintaining proper temperature by making adjustments for varying

weather conditions, taking equipment on or off line, working a network of pumps, tanks and piping, etc.; (d) knowledge of energy conservation measures; (e) knowledge of refrigerant systems and precautions required in handling them; and (f) experience using tools and equipment such as wrenches, gage manifold, power tools, test equipment for water analysis and related instruments, gauges and refrigeration leak analyzer altogether, to monitor systems, perform preventive maintenance and troubleshoot problems.

Two of the five years of experience must have involved the operation, testing, diagnosing, maintenance, and repair of a range of HVAC equipment and systems and interpreting and applying schematics, diagrams and manuals to troubleshoot and isolate system malfunctions.

A License as a Master HVAC Mechanic is evidence of five years of progressively responsible HVAC trade experience, but is not, by itself, evidence of the two years of specialized experience in the operation, testing, diagnosing, maintenance, and repair of a range of HVAC equipment and systems as specified.

3. Education, experience, or training indicating the ability to make decisions, take action, or direct the actions of others to maintain or restore service until relieved; and to perform related Operator-In-Charge functions.
4. Environmental Protection Agency (EPA) Universal Certification (Section 608) to service HVAC/Refrigeration Equipment or ability to obtain certification within 90 days from the date of the Final Offer Letter. A qualified candidate who is selected, but lacks certification, must obtain certification within 90 days of the date of the Final Offer Letter.

PREFERRED QUALIFICATIONS

The qualifications listed below (if any) are preferred and may be considered in the selection process, but they are not required to be rated qualified for this job.

1. A License as a Master HVAC Mechanic.
2. Experience working safely in a trade in a machinery room, shop, or equivalent work environment such as, but not limited to, working in a trade requiring prolonged concentration and attention to detail amid moving machinery, partially blocked or obscured vision, hazardous chemicals and waste, tip or fall hazards, or other types of trades or labor operations that require continuous situational awareness and alertness to continually changing circumstances and events.

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER FACTORS (KSAOs)

The following KSAOs are required for successful performance of this job and are a basis for rating and ranking applicants who are found to meet the MQs. *Local, Federal, airport industry, or Airports Authority specific bodies of knowledge listed below may be acquired on the job,*

typically; ability to rapidly acquire them is required at the time of vacancy announcement closure.

1. Knowledge of the principles and operating characteristics of central plant heating and air conditioning systems to perform journey-level work including using high temperature hot water generators, industrial chillers and chilled water storage tanks and their relation to hot and chilled water production. Knowledge of energy conservation concepts and practices for central heating and cooling systems, and skill in recognizing operating deviations and making necessary corrections. This includes, but is not limited to:
 - a. Knowledge of thermal ice-storage machines, chillers, water levels, water pressures, cooling temperatures, refrigerant pressure-temperature relationships, refrigerant levels and temperatures and refrigerant cycles to maintain safe and efficient operation of cooling equipment/ systems; and
 - b. Knowledge of hot water generators, e.g., nitrogen pressurizing, maintaining temperature through varying weather conditions, taking equipment on or off line, switching burners from natural gas to oil, etc.
2. Knowledge of Airport utilities systems and equipment and refrigerant systems to be able to relate operations of the central plant chillers to the HVAC distribution.
3. Knowledge of Airport priorities for service and emergency procedures to make decisions and take or direct action(s) to maintain or restore service until relieved.
4. Knowledge of the locations of the Airport's utilities' facilities and systems (machine rooms; water, gas and sewage lines; gauges and isolation valves; heat pumps; controls, etc.) to respond quickly and effectively to problems, periodically check the operation of HVAC equipment various areas, isolate defective water or gas system components when there is a serious leak or frozen pipes, and single out specific equipment for corrective action.
5. Skill in problem solving to select, organize, and logically process relevant information (verbal, numerical, or abstract) to solve a problem. This includes the ability to recognize subtle aspects of problems, identify relevant information, and make balanced recommendations and decisions. Examples include diagnosing and evaluating HVAC problems, evaluating them, and deciding the urgency of the situation, what will be required to make the equipment operational, and if repairs can be made on the spot by the operator alone or whether other personnel should be called in.
6. Skill in using a computer and (a) modern office suite software (such as MS Office) to communicate (email); plan; schedule; word process (light word processing); manipulate data and develop reports; and perform research (Internet use, to search out information on equipment); (b) enterprise systems/software for requisitioning and other functions; and (c) special systems/software such as Siemens Apogee semi-automated computer-based instrumentation and distributed control systems for heating/cooling systems to verify normal

operating performances, adjust controls and identify and isolate operational problems.

7. Skill in oral communication to understand verbal information (including instructions, descriptions, and ideas) and to express such information verbally so that others will understand. This includes the ability to encourage oral communication by others. Examples include exchanging routine and non-routine operational and procedural information with co-workers, workers from other areas, and, as necessary, Airport Operations Duty Officers, public safety personnel and other personal contacts, especially concerning corrective actions needed for after-hours service problems or other facility-based emergencies.
8. Interpersonal skills to interact with business contacts in a businesslike, customer service-oriented manner.
9. Skill in using tools and equipment of the trade, such as hammers, wrenches, amp probe, pH meter, gauges, and refrigeration leak analyzer, and computer to monitor HVAC systems, troubleshoot and evaluate problems and perform preventive maintenance (e.g., determine need to check torque on bolts and tension on belts, perform water system chemical tests, etc.).
10. Skill in written communication to understand written information (including instructions, descriptions, and ideas) and to express such information in writing so that others will understand. Examples include reading technical-operational materials (such as technical manuals, maintenance schedules, and work orders) and writing briefly about similar types of matters, such as recording readings and shift operations in the daily log, closing out work orders, etc.
11. Knowledge of, and ability to apply Federal, state, and Airports Authority safety rules and procedures to work safely.

RESPONSIBILITY Is responsible for controlled temperatures throughout the Airport and the safe operation of Airport HVAC systems. Works under the direction of the HVAC Operations Group Supervisor (Supervisor) when he/she is on the same shift (typically the day shift); works independently as OIC at all other times. As OIC, exercises authority, within guidelines, to take or direct the actions needed to maintain or restore service. Advises Supervisor of irregularities or conflicts which arise. The Supervisor may assign special tasks. While on OIC duty, the Airport Operations Duty Officer or other Airport officials such as the Airport Police may request work, e.g., to ensure the security of the Airport during nonbusiness hours. The Supervisor reviews completed work for quality, quantity, timeliness, customer service, teamwork, adherence to requirements, and other factors, including attainment of specified performance management goals and objectives through written logs, reports on the handling of problems, spot checks, and other means.

EFFORT Work requires moderate to heavy physical exertion when working as an HVAC Mechanic and OIC in the Terminals and around the Airport and light physical effort (such as working at the computer control board) as OIC in the Utilities Building. Lifts, pushes/pulls or

otherwise moves items weighing up to 75 pounds. Frequently walks or otherwise moves throughout the terminals when inspecting machine rooms and responding to trouble calls. Ascends stairs and stepladders as required. For hard-to-reach and hard-to-see places maneuvers by bending, stooping, crouching, kneeling, reaching or other positioning of self to access and monitor heating and cooling equipment. Ascends to roof tops reachable by vertical ladders to evaluate problems with heat pumps. Sometimes works on overhead equipment. Makes fine distinctions in color (shades of boiler feed water) using testing materials. Obtains operational information and makes diagnosis and determines effectiveness of repair by displays and read-outs of dials, gauges, and monitors. Identifies differences in the sounds of running equipment. Responds to alarms from various locations, e.g., low pressure on boiler. Reviews, corrects, creates and updates schematics containing small print. In driving, operates vehicle using judgment in consideration of weather, traffic and other factors. Communicates by two-way radio and telephone

WORKING CONDITIONS At times works in clean boiler room; at other times works outside in all kinds of weather, in damp and drafty machine rooms and in dusty, dirty work areas. Occasionally works in confined spaces such as air handlers and ducts. Annually, may work inside the hot water generators for periods ranging up to most of the shift. Is exposed to fumes from jet aircraft and baggage carts, potentially hazardous chemicals and other materials and noise from jet aircraft, high-pressure boilers and HVAC units. Drives on busy airfield. Is subject to the possibility of burns or scalds from the high-temperature hot-water system, falls and danger of moving equipment. Takes care, follows safety procedures and wears goggles, insulated and rubber gloves, safety shoes, hard hat and other personal protective gear, as appropriate.

OTHER SIGNIFICANT JOB ASPECTS Is subject to hold-over and recall on a 24-hour basis for essential services and emergencies such as snow removal and restoration of service.