Job Description: Air Conditioning Mechanic. T19
Location: Ronald Reagan Washington National Airport

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 a full performance (journey) level Air Conditioning Mechanic at Ronald Reagan Washington National Airport (DCA). Installs, tests, troubleshoots, repairs, and maintains a wide range of commercial-grade/industrial-scale air conditioning (A/C) and ventilation systems, refrigeration equipment, and auxiliary heating and A/C units within airport buildings, such as, but not limited to, chillers, air and water-cooled condensers, low-pressure boilers, humidifiers, dehumidifiers, circulating pumps, air handlers, exhaust fans, air curtains, ice machines, refrigerators and associated equipment/components. Applies the theories, principles, requirements, and standards of the trade and uses the full range of tools of the trade, including specialized tools and software to adjust equipment/systems and diagnose problems. Performs related functions.

Repairs, installs, and maintains chillers, electronic air cleaners, reciprocating and hermetic compressors, air and water-cooled condensers, low-pressure boilers, hydronic heating systems, high temperature hot water systems, humidifiers, dehumidifiers, circulating pumps, air handlers, exhaust fans, air curtains, ice machines, and refrigerators.

Repairs and replaces electrical, electronic, and pneumatic controls to HVAC equipment. Troubleshoots and diagnoses electrical problems on air conditioning equipment using wiring diagrams and schematics, as required, for all voltages within units and back to service disconnects. Regularly repairs non-functioning water coolers and window air conditioners by repairing or replacing components such as small motors.

Performs preventive maintenance, such as aligns belts and pulleys on blowers; replaces or cleans filters on air handlers and air curtains, etc.; cleans strainers; inspects bearings; drains air compressors; checks refrigerant charge and adds refrigerant as necessary by weighing or charging to manufacturer's specifications; punches tubes in chillers to remove scale; replaces broken or worn valve plates, drive belts, pulleys, fan blades, fuses, etc.; lubricates fan motors, shaft bearings, moving parts, etc.; and calibrates thermostats and pneumatic controls.

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 power and hand tools (such as sanders, grinders, saws, drills, wire cutters, shears, and wrenches) and Building Automated Systems (BAS) to operate, test, diagnose, troubleshoot and adjust equipment/systems problems, and specialized tools and equipment such as vacuum and acid pumps; amp/volt/ohm meters; acetylene and oxygen torches; leak detectors; gauges; psychrometers; hydrometers; manometers; Simpson or similar multimeters; pipe cutters, benders and threaders; and refrigerant reclaimer when maintaining and repairing air conditioning systems, equipment and units.

Welds, brazes, solders, bends and cuts pipe and tubing (brazes and solders refrigeration lines to seal refrigerant and maintain vacuum in the line). May fabricate supports for equipment and recommend design and size of duct work, etc. May design and install new air conditioning systems for small areas (such as, determines equipment needed, sizes and layout of pipes, and sizes and layout of ducts; assembles components into a system; and performs installation). May fabricate ducts.

Substitutes as Air Conditioning Equipment Operator by operating centralized, multiple zone, air
conditioning and heating systems in airport buildings: checks temperature sensing points, turns equipment on and off, makes necessary adjustments) and performs related functions. May perform chemical tests of cooling-tower water.

Guides lower grade A/C workers and provides on-the-job training as necessary.

As required, picks up supplies and parts and performs inventory of tools, materials, etc.

Occasionally cleans cooling towers and machine rooms and paints equipment. Writes discrepancy reports for problems encountered on tenant-maintained equipment and completes a Job Authorization Request if problems require additional work or parts.

Uses a computer, modern office productivity software such as MS Office, specialized software such as the Computerized Maintenance Management System (CMMS) and supply and procurement modules of Oracle used by the Airports Authority, and radio and telecommunication devices, to plan, schedule, communicate, research part information, keep up with technology, obtain/close out work orders, 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, vendors/suppliers/service contractors/tenants, airport users, and the general public.

Drives a pick-up truck (with tools, parts, etc.) to airside and landside work sites, and may drive to/from suppliers and other sites.

*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 three 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. Four years of progressively responsible experience (post high school) in the installation, test, diagnosis, maintenance, and repair of air conditioning (A/C) equipment and systems, which includes specialized experience with a range of commercial and industrial A/C equipment and systems, such as, but not limited to, chillers, air and water-cooled condensers, low-pressure boilers, humidifiers, dehumidifiers, circulating pumps, air handlers, exhaust fans, air curtains, ice machines, and refrigerators. This includes knowledge of the theories, principles, requirements, and standards of the trade. (A Journey License as an Air Conditioning Mechanic is evidence of four years of progressively responsible trade experience, but is not, by itself, evidence of experience with commercial and industrial A/C
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3. Environmental Protection Agency (EPA) Universal Certification (Section 608) to service HVAC/Refrigeration Equipment.

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 Journey License (or higher) as an HVAC Mechanic.

2. Experience working safely in a skilled trade requiring prolonged concentration and attention to detail on a busy airfield or in an equivalent work environment, such as, amid maritime or motor freight cargo loading/unloading, or other types of near-constant movements/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. Full performance (journey) level knowledge of, and skill in, heating, ventilating, and air conditioning (HVAC) equipment and systems installation, testing, adjustment, maintenance, troubleshooting, and repair/replacement. This includes but is not limited to:

   Knowledge of the general principles of air conditioning (A/C) and refrigeration, such as the refrigeration cycle, heat transfer laws, the use of refrigerant tables, and the pressure-temperature characteristics for the different systems, to troubleshoot and repair A/C and refrigeration equipment, such as chillers, air handlers, package and split-system air conditioners, heat pumps, etc.

   Knowledge of electrical, pneumatic, and electronic principles to evaluate, adjust, and test the operation of HVAC controls.

   Knowledge of Building Automated Systems (BAS) to operate, test, and troubleshoot HVAC equipment.

2. Skill in using tools, technical manuals, schematics, materials, and other equipment and guides in journey level A/C work. Examples include:

   Skill in using shop math to calibrate thermostats and determine sizes of ducts, capacities of equipment, and airflow required to air condition/ventilate small areas.
Skill in interpreting blueprints, schematics, and wiring diagrams to troubleshoot electrical, pneumatic, and mechanical malfunctions, and repair refrigerators, air conditioners, air handlers, etc.

Skill in using tools and equipment, such as psychrometers to measure atmospheric conditions, torches to weld pipe, and leak detectors to locate leaks, etc.

3. Skill in problem solving to select, organize, and logically process relevant information (verbal, numerical, or abstract) to solve a problem. This includes skill in using technical manuals and interpreting blueprints and schematics to assemble, troubleshoot, adjust and correct electrical problems and perform work according to specifications.

4. Skill in using a computer and modern office suite software (such as MS Office) to plan, schedule, communicate (using email), word process (light word processing only) and perform research (Internet use, as in searching for parts and performance information and keeping up with technology), specialized software (such as the CMMS to obtain/close out work orders, supply and procurement modules of Oracle to requisition parts, and HVAC diagnostic and operating software to troubleshoot problems and fine tune equipment), and radio and telecommunication devices to exchange work information.

5. 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 administrative-programmatic materials, such as Airports Authority supply procedures, and writing briefly about similar types of matters, such as closing out work orders and using Material Safety Data Sheets (MSDS).

6. Skill in oral communication to understand verbal information (including instructions, descriptions, and ideas) and to express such information verbally so that others will understand. Examples include exchanging routine and non-routine operational and procedural information with co-workers, contractors, and customers.

7. Interpersonal skills to interact with business contacts in a businesslike, customer service-oriented manner.

8. Ability to work safely and knowledge of the safety rules and procedures needed to do so.

**RESPONSIBILITY** Is responsible, at the full performance (journey) level, for working safely in installing, maintaining, troubleshooting and repairing air conditioning, ventilation systems, refrigeration equipment, and auxiliary heating units. Reports to the Section Supervisor and may work under a Leader on a regular or irregular basis. Independently plans, lays out and completes work on own or in a team and solves journey-level problems in accordance with established priorities, policies, procedures, preventive maintenance guides, manufacturer’s specifications, codes and other requirements and standards. Keeps Leader or Supervisor informed of progress and problems or conflicts requiring assistance. The work is checked for such factors as quantity,
quality (including compliance with work orders, regulations and accepted trade practices), timeliness, customer service, and performance goals and measures.

**EFFORT** Work involves moderate to heavy physical effort. Moves throughout the airport complex. Frequently works in hard-to-reach and hard-to-see situations that typically require standing, walking, stooping, kneeling, crouching, reaching, climbing or other positioning of self to access and work on air conditioning equipment. Works in cramped positions and tight spaces for prolonged periods. Independently lifts, pushes/pulls or otherwise moves into position items such as compressors and window A/C units weighing up to 75 pounds. Determines overheating equipment by excess heat given off and the effectiveness of repairs by the coolness of the air output. Makes diagnosis and determines effectiveness of repair by displays and read-outs of dials, pressure and other gauges, and monitors Distinguishes color coded objects (such as, color coded wiring and water chemical testing materials). Exchanges work information by telephone and two-way radio. Responds to various system alarms and radio calls. Operates vehicle based on weather, traffic and other factors, using judgment.

**WORKING CONDITIONS** Works inside and outside in all types of weather, including inclement weather (rain, fog, snow, ice, cold and high heat/humidity). Is exposed to various risks and hazards: possible burns from steam and chemicals; fumes and gases; possible electrical shock; potential falls from ladders and buildings; injury from flying metal parts from grinding; and loud noises from electric generators, chillers, and compressors. Sometimes works with dirty, greasy parts in confined spaces. Is exposed to dust, dirt, and dampness. Takes care, exercises established safety precautions and wears respirator, gas/oxygen detector, coveralls, safety harness, gloves (rubber and leather), hard hat, steel-toed shoes, safety goggles, safety-recovery harness with tripod, confined space monitor, and other personal protective equipment as appropriate and required. Is subject to the pressure of working quickly, but safely and accurately, to keep utilities in service or restore service.

**OTHER SIGNIFICANT JOB ASPECTS** Subject to hold-over or recall on a 24-hour basis for essential services and emergencies such as HVAC system/equipment failure and snow removal.