

Code: 2181

Title: INSTRUMENTATION AND CONTROL SPECIALIST-SENIOR

SUMMARY: Performs technical work in the repair, maintenance, installation, calibration and modification of field environmental instrumentation and laboratory analytical equipment. This is distinguished from Instrumentation & Control Specialist-Principal, which has lead responsibility and participates in systems planning.

DUTIES/RESPONSIBILITIES: (Work assignments may vary depending on the department's needs and will be communicated to the applicant or incumbent by the supervisor)

Troubleshoots, repairs, maintains and installs process control systems such as programmable logic controllers, chart recorders, direct reading gauges, gas analyzers, density analyzers, differential pressure transmitters, process control valves, chemical additions systems and laboratory analytical equipment; Performs routine diagnostics and component level repair using specialized electronic, electrical and pneumatic test equipment including carbon monoxide analyzers, oxides of nitrogen analyzers, sulfur dioxide analyzers, particulate samplers, dichotomous samplers, calibrations systems, data loggers and meteorological equipment.

Calibrates instrumentation components using shop manuals, schematics and ladder and loop diagrams; Repairs, maintains and installs mechanical, electronic, pneumatic and micro processor-based instrumentation such as magnetic and sonic flow meters, bubbler tube level metering systems, PH meters and turbidity meters;

Modifies process control and laboratory components and prepares schematic diagrams to reflect changes;

Assists the supervisor in the review of engineering drawings and specifications;

Monitors and maintains safety precautions and hazards following federal, state and county guidelines including control of stored energy, working with and around methane, hydrogen sulfide, chlorine, sulfur dioxide, cryogenics, acids, caustics, sewage, lockout procedures and proper use of protective equipment;

Documents work performed in manual and automated systems;

May write routine computer programs or modify existing software in the troubleshooting and repair of instrumentation systems.

KNOWLEDGE & SKILLS:

Knowledge of:

- principles, practices, and techniques of mechanics, electricity, pneumatics, hydraulics, electronics and mathematics of industrial process control instrumentation and laboratory analytical equipment;
- equipment and tools used in the repair and maintenance of mechanical, electronic and pneumatic instrumentation components;
- operation, repair, maintenance, installation, and calibration of process control systems and components and laboratory analytical equipment;
- hazards and safety practices according to federal, state and county guidelines;
- analog and digital control systems and devices, digital electronic theory, terminology and application;
- word processing and spreadsheet applications, data acquisition systems and microcomputer systems as used in an analytical laboratory.

Skill in:

- repairing, maintaining, installing and calibrating process control instrumentation;
- monitoring and maintaining a safe work environment;
- following verbal and written instructions;

- . using hand tools and specialized tools and equipment in the calibration and repair of electronic process control components;
- . reading and interpreting shop manual and schematic diagrams;
- . repairing, maintaining and calibrating laboratory analytical equipment;
- . preparing schematic diagrams;
- . troubleshooting and repairing microcomputer systems and components;
- . documenting work performed in manual and automated systems.

MINIMUM QUALIFICATIONS:

EITHER:

(1) An Associate of Applied Science (A.A.S.) Degree or certificate for Direct Employment from an accredited college or technical school in electronics technology instrumentation and process control and one year of experience in the repair and maintenance of laboratory or process control instrumentation in an industrial, environmental or laboratory setting.

OR:

(2) Three years of journey-level experience in the repair, maintenance, installation, operation or calibration of electronic instrumentation or industrial/laboratory process controls and instrumentation.

OTHER REQUIREMENTS:

Licenses and Certificates: A current Arizona Class D driver's license is required at the time of appointment.

Physical/Sensory Requirements: Some positions may carry the risk of exposure to infectious diseases, asbestos or wastewater and sewage products, therefore special medical screening prior to or during employment may be necessary to assure employee health and safety. Some positions may require exposure to various extremes of weather and temperature and working in confined areas to access equipment, which may require the proper wearing of individual safety and protective equipment. All positions require the ability to lift up to seventy-five pounds for brief periods.

This class specification is intended to indicate the basic nature of positions allocated to the class and examples of typical duties that may be assigned. It does not imply that all positions within the class perform all of the duties listed, nor does it necessarily list all possible duties that may be assigned.

Pima County

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