

Title: Instrument and Control Specialist
PG: 038
Status: Civil Service
Position Reports to: Power Production Foreman
Department: Lakeland Electric

Class Code: 3112
Date: 10/09

GENERAL DESCRIPTION OF CLASS:

This is journey level technical work in maintaining instrumentation and controls equipment and systems in a multi-fueled electrical power generating plant. An employee in this position has the responsibility for maintaining, repairing, modifying or assisting in engineering functions of a high level of difficulty concerning digital and analog equipment, pneumatic, auxiliary equipment, microprocessors and programmable equipment, and other related instrumentation systems and devices. Task assignments require technical competence to the degree of performing actual work unsupervised with minimal follow up requirements.

ESSENTIAL FUNCTIONS:

1. Performs repairs, modifications calibrations, and preventive maintenance on pneumatic, digital, analog, programmable, and other auxiliary equipment. Performs repairs on controls systems for turbine generator, burner management, coal handling, municipal solid waste, scrubbers, waste water process, precipitator, ash handling, EPA monitor/controls, fuel unloading, chemical controls, metals removal, sample systems, waste byproduct process, and associated equipment. Works on solid state utility wide controls equipment, computers, microprocessors, and communications equipment.
2. Troubleshoots instrumentation systems, loops, and basic equipment to the component using the appropriate test equipment.
3. Repairs printed circuit boards and associated equipment; constructs special devices as required.
4. Performs print corrections by revising drawing or makes new drawings for submission to be drafted, often at the engineering level.
5. Tunes complete control loops.
6. Maintains detailed work reports.
7. Maintains interface with operations and other crafts.
8. May be required to supervise and train lower level employees.

ADDITIONAL RESPONSIBILITIES:

1. Performs related work as required.

KNOWLEDGE, SKILLS & ABILITIES:

1. Considerable knowledge and practical applications of the concepts and principles of pneumatic and electronic automatic process controls; control mode, input/output relationships and calibration techniques.
2. Knowledge and understanding of the functions of pneumatic and electronic pressure, level, temperature and "smart" transmitters.
3. Knowledge of the symbols and standard practices used in the preparation of process and instrument flow diagrams and the ability to use technical libraries to determine state-of-the-art methods for instrument selection, application, maintenance, trouble-shooting and problem analysis.
4. Knowledge of the general structure and functional role of microprocessors and maintenance philosophies for unit, board and component level trouble-shooting.
5. Knowledge of the basic characters and major components of computer data collection systems for power production.
6. Knowledge of the principles of operations, terminology, safety considerations and applications for common analytical instruments.

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7. Skill in the operation of electric/electronic test equipment such as DC power supplies, milliamps and millivolt calibrators, multimeters, signal sources, function generators, oscilloscopes, frequency generators and counters as well as standard tools.
8. Skill in the application of operational principles basic programming and general principles of Programmable Logic Controllers (PLC) for testing, trouble-shooting, and repairs of PLC components and highway systems.
9. Ability to analyze and correct instrument operating problems or the identification of problems suggesting modifications to meet operational needs as well as assisting in upgrading installed systems.
10. Ability to keep records, prepare accurate reports, and demonstrate communication skills, interpret varied instrumentation and engineering diagrams, specifications and schematics, including the ability to understand and carry out directions.
11. Ability to maintain harmonious relations with other employees and vendors.
12. Ability to perform supervisory duties when required.

WORKING ENVIRONMENT/CONDITIONS:

Requires active work that involves walking or standing some of the time, exerting up to 100 pounds of force on a recurring basis, and routine keyboard operations.

The job risks exposure to electrical shock, wet/humid conditions, heights, adverse weather conditions, confined spaces, pollen, dusts, fumes, noxious odors, vibration, extreme noise levels, moving machinery, and bright/dim light.

The job requires normal visual acuity, and field of vision, hearing, speaking, color perception, sense of smell, depth perception, and texture perception.

QUALIFICATIONS (EDUCATION, TRAINING AND EXPERIENCE):

1. High school diploma or its equivalent including or supplemented by courses in basic physics and, solid state technology with four (4) years of experience in electronic equipment and controls.
2. Two (2) years of experience in the maintenance and repairs of pneumatic, analog, digital and programmable equipment in power plant control systems or related equipment.
3. An equivalent combination of education and experience that is determined to be directly related to the foregoing specific requirements may be substituted.
4. Completion of City University level one (1) or completion within twelve (12) months.

SPECIAL REQUIREMENTS:

1. Must possess and maintain a valid state of Florida driver's license.
2. Must be willing to maintain a valid telephone number.
3. May be required to work overtime, or alternate hours, as necessary for the efficient operation of the department. Position may be designated as Mission Critical by Department Director.