



## **MASTER BUILDING CONTROLS ELECTRICIAN**

Job Code: 405ABE  
Bargaining Unit: 20  
Effective Date: 8/25/2005

### **Description of Work**

#### **General Statement of Duties**

Supervises, assigns and performs electrical work involved in the construction, installation, maintenance and repair of electronic and electrical systems primarily related to automation control devices, instruments, apparatus and equipment; and performs related duties as assigned.

#### **Supervision Received**

Works under the general supervision of a unit, division or department head.

#### **Supervision Exercised**

None.

### **Typical Duties Performed**

The listed examples may not include all the duties performed by all positions in this class.

Determines which facilities can benefit from automation and the degree and type of automation that should be installed; designs, develops and evaluates new units of electronic equipment.

Prepares test reports including analysis of results and cost analysis of corrective actions necessary; prepares technical reports on equipment performance.

Determines suitability of automated controls and equipment in terms of objectives and recommends or redesigns circuits as necessary.

Installs and maintains complex computer and associated equipment which is dedicated to governing industrial controls.

Installs, maintains and supervises the microwave transmitters, receivers, modems, diplexers, duplexers, antenna cables, antennas, etc.

Leads the installation of the automation system which includes programming controller, motor starter, pneumatic controls interface, electronic control, security systems, fire alarm, etc.

Traces circuitry, diagnoses malfunctions and adjusts controls to achieve peak performance; adjusts voltage, gain, stability and other characteristics of circuits.

### **Knowledge, Skills and Abilities**

Through knowledge of electronics theory, including transistor and solid-state diode theory, operation of pulse forming networks, voltage and current comparison networks.

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### **Knowledge, Skills and Abilities (continued)**

Thorough knowledge of laws, rules and regulations (e.g., National Electrical Codes, F.R.C., O.S.H.A) dealing with high voltage work, installing and maintaining high voltage electrical raceway and installation, bonding, grounding and over current protection.

Thorough knowledge of electrical and electronic block diagrams, wiring diagrams and schematics in order to understand the construction and operation of industrial controls and troubleshoot malfunctions.

Thorough knowledge of characteristic voltage, current and signal shape of the input and output of a wide variety of microprocessors, integrated and discrete solid state circuits or transistor applications in order to recognize indications of improper operation and differentiate them for temporary anomalies introduced by the testing.

Through knowledge of how to install, maintain and troubleshoot heating, ventilation and air conditioning controls.

Thorough knowledge of the operation of security system equipment including microphones, amplifiers, motion sensors, ultra sonic sensors, dialers, VCR equipment, glass break detectors, Mardix equipment, etc.

Thorough knowledge of the operation, capabilities and limitations of electronic control equipment and systems.

Considerable skill in operating a variety of hand and power tools safely.

Considerable skill in troubleshooting complex electronic systems.

Considerable ability to plan, assign, coordinate and supervise skilled trade employees.

Considerable ability to estimate the costs of materials and labor for electrical work.

Working ability to communicate effectively, both orally and in writing.

### **Minimum Qualifications**

High school diploma or G.E.D. certificate, must meet the experience requirements to obtain a Class A journey-level electrician's license, must possess and maintain a Class A journey-level electrician's license issued by the State of Minnesota and must have three years of experience in automation control systems and microwave installation, repair and maintenance. Must possess a Class A master electrician's license issued by the State of Minnesota within one year of appointment; must possess an FCC license within two years of appointment. Must possess a valid Minnesota Class D driver's license, or equivalent out-of-state driver's license, with no suspensions or revocations within the two-year period prior to the date of appointment (suspensions for parking-related offenses excluded); and must possess a FCC license within two years of appointment. Please note that a candidate's driving record will be reviewed prior to an offer of employment.