

ELECTRIC SUBSTATION TECHNICIAN I
ELECTRIC SUBSTATION TECHNICIAN II

DEFINITION

To perform work in the installation, testing, maintenance, calibration, repair and modification of electrical and electronic, communication and protective relay equipment related to the City's receiving and distribution substations and electronic metering systems

DISTINGUISHING CHARACTERISTICS

Electric Substation Technician I - This is the entry level class in the Electric Substation Technician series. Positions in this class typically have little or no directly related work experience and work under immediate supervision while learning job tasks. The Electric Substation Technician I class is distinguished from the II level by the performance of less than the full range of duties assigned to the II level. Incumbents work under immediate supervision while learning job tasks, progressing to general supervision as procedures and processes of assigned area of responsibility are learned.

Electric Substation Technician II - This is the full journey level class in the Electric Substation Technician series and is distinguished from the I level by the ability to perform the full range of duties assigned with only occasional instruction or assistance as unusual or unique situations arise. Positions in this class are flexibly staffed and are normally filled by advancement from the I level.

This class is distinguished from the Senior Electric Substation Technician in that the latter performs the most difficult and responsible types of duties assigned to classes within this series including assigned responsibilities for the installation, maintenance and repair of electric substations and exercises technical and functional supervision over a crew.

SUPERVISION RECEIVED AND EXERCISED

Electric Substation Technician I

Receives immediate supervision from an assigned supervisor; and receives technical and functional supervision from a Senior Electric Substation Technician. Electric Substation Technician I's may receive technical supervision from an Electric Substation Technician II as assigned at a worksite.

Electric Substation Technician II

Receives general supervision from an assigned supervisor; and receives technical and functional supervision from a Senior Electric Substation Technician.

May exercise technical supervision over an Electric Substation Technician I as assigned at a worksite.

EXAMPLES OF ESSENTIAL DUTIES– Duties may include, but are not limited to, the following:

Design, install and maintain various types of telecommunication and supervisory equipment including Supervisory Control and Data Acquisition (SCADA) system; JungleMux, perform splicing and testing of fiber optic equipment, Ethernet networks and phone systems.

Install, troubleshoot, repair, upgrade, test and program electromechanical, solid state and microprocessor protective relays, operating devices, power transformers and related communication systems.

Perform work in the repair and maintenance of live circuits and related low and high voltage equipment.

Install, test and maintain power transformers, high voltage breakers, PT's, CT's and Air Disconnects.

Work in high voltage electric substations in the construction, commissioning, testing, troubleshooting, maintenance and operation of substation and switchyard equipment which includes power transformers, 60 kv breakers, 12 kv breakers and associated equipment; perform periodic trip testing.

Design, understand and troubleshoot complicated control and relaying schemes; test, maintain, and troubleshoot all components using computer software.

Sample and test insulating oil and other insulation media and maintain testing records.

Perform high-voltage substation switching operations in coordination with Line Technicians and/or dispatch.

Perform infrared scanning of transmission/distribution switchgear and substation equipment to determine issues with connection.

Routinely inspect all substation equipment; maintain required records of inspections, repairs and testing for regulatory purposes.

Receive, test and accept new equipment.

Operate equipment in a safe and efficient manner in a variety of hazardous environments including toxic liquids and gases and high voltages.

Build and maintain positive working relationships with co-workers, other City employees, and the public using principles of good customer service.

Perform related duties as assigned

MINIMUM QUALIFICATIONS

Electric Utility Technician I

Knowledge of:

Basic principles of electrical systems and electrical theory.

Types of tools, methods and materials used in electrical work.

Components, parts and basic safety used in substations.

Computer software.

Safe work practices.

Ability to:

Perform maintenance, troubleshoot and repair work on substations and related equipment.

On a continuous basis, know and understand operations, and observe safety rules; intermittently analyze problem equipment; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others.

Intermittently, sit while studying or preparing reports; bend, squat, climb, kneel and twist when installing, repairing, and servicing equipment; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 40 pounds or less.

Understand and interpret written and oral instructions, electrical drawings, blueprints, plans and wiring diagrams.

Maintain and repair SCADA system.

Install and maintain city communication systems.

Use and care for tools and equipment used in maintaining and repairing electrical and electronic devices.

Work safely under emergency, hazardous conditions and high voltage environments.

Assist others in municipal electrical and electronic maintenance and repair duties.

Maintain accurate records.

Communicate clearly and concisely, both orally and in writing.

Establish and maintain effective working relationships with those contacted in the course of work.

Experience and Training

Experience:

One year of experience in the maintenance, repair and testing of high voltage electrical equipment in an industrial environment.

Training:

Equivalent to the completion of the twelfth grade GED, or higher level degree, supplemented by specialized training in electrical or an electronics field.

License or Certificate

Possession of a valid California driver's license by date of appointment.

Electric Substation Technician II

In addition to the qualifications for the Electric Substation Technician I:

Knowledge of:

Computer controlled test equipment.

Complex control electric and electronic schematics.

Communications systems including RTU, SCADA, JMUX, fiber optic splicing, datalink Ethernet Radio Modem and phone land line.

Electric circuit protection.

Process control and instrumentation devices.

Lockout/tagout and high voltage procedures.

Complex principles of electrical and electronic repair, maintenance and system design.

Principles, methods, materials and equipment used in the installation, testing, maintenance, operations and modification of electronics equipment.

Ability to:

Independently troubleshoot and repair a wide variety of electrical and electronic equipment and devices found in electric substations.

Analyze electrical and electronic prints, schematics and test data.

Bench test equipment.

Troubleshoot and repair electrical and electronic equipments.

Provide training and technical supervision to Electric Substation Technician I's.

Experience and Training

Experience:

Two years of responsible electrical maintenance experience performing duties similar to that of an Electric Substation Technician I with the City of Roseville.

Training:

Equivalent to the completion of the twelfth grade GED, or higher level degree, supplemented by specialized training in electronics or a related field.

License or Certificate

Electric Substation Technician I/II

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Possession of a valid California driver's license by date of appointment.

05-09-20 Electric Substation Technician I/II

03-15-18

11-09-10

01-01-07 Electric Utility Technician I/II