

PUBLIC UTILITY DISTRICT NO. 1 OF
GRAYS HARBOR COUNTY, WASHINGTON

POSITION TITLE: Substation Engineer Level II
REPORTS TO: Substation Engineering Supervisor
SUPERVISES: None
UNION AFFILIATION: I.B.E.W. System Engineers
PURPOSE OF POSITION: Performs moderately complex electrical engineering work required for the planning, design, construction, oversight, and support of the substations, and SCADA, and substation automation systems. This position requires knowledge of the principals, practices and procedures, including materials, equipment and techniques, used in professional level work in the field of electrical engineering.

The employee will be assigned either Substation or SCADA and substation automation as their "area of emphasis". The employee is expected to satisfactorily perform all duties and responsibilities in their area of emphasis as defined in the "Design and Maintenance" portion of the job description. The supervisor and the employee will work together to provide opportunities for the employee to gain knowledge and proficiency in the non-emphasis area.

DUTIES AND RESPONSIBILITIES

A) DESIGN AND MAINTENANCE

SUBSTATION

- 1) Perform routine electrical engineering design and analysis for substation and protective relaying projects.
- 2) Preparation of specifications for contractor bids on substation construction projects.
- 3) Preparation of substation equipment specifications for circuit breakers, protective relaying, transformers, switchgear, communications, steel, switches, etc.
- 4) Perform substation equipment bid evaluations and provide recommendations for purchases.
- 5) Participate in coordinating projects and other activities and work with contractors and consulting engineers on design, construction and specifications of substation projects.
- 6) Evaluate, prepare and recommend transmission and distribution system protection coordination schemes.
- 7) Conduct fault studies for proper application of fuses, reclosers and substation relay settings.
- 8) Perform economic evaluations and cost estimating for substation projects and operation.
- 9) Prepare preliminary and long range plans, budget estimates, and material requirements for substation projects.
- 10) Monitor progress of substation construction projects.
- 11) Recommend for approval contractor change orders and payments.

- 12) May assist in establishing or revising substation construction standards.
- 13) Provide instruction and answers to questions concerning substation and protective relaying design issues.

SCADA and Substation Automation

- 1) Perform routine electrical engineering design, construction oversight, software implementation and maintenance and analysis for SCADA and substation automation projects.
- 2) Cooperate with other departments to design, implement and maintain communication protocols (software) for data interfaces to intelligent devices for use with SCADA and substation automation systems.
- 3) Preparation of specifications for contractor bids and equipment and software purchases for SCADA and substation automation system construction projects.
- 4) Perform SCADA and substation automation system equipment and software bid evaluations and provide recommendations for purchases.
- 5) Participate in coordinating SCADA and substation automation projects and other activities and work with District crews, contractors and consulting engineers on design, construction and specifications of SCADA and substation automation system projects.
- 6) Research and make recommendations for integrating devices to the SCADA and substation automation systems.
- 7) Perform economic evaluations and cost estimating for SCADA and substation automation system projects.
- 8) Prepare preliminary and long range plans, budget estimates, and material requirements for SCADA and substation automation projects.
- 9) Perform project oversight and review of SCADA and substation automation system construction projects.
- 10) Recommend for approval contractor change orders and payments.
- 11) Participate in development and revising of SCADA and substation automation system construction standards.
- 12) Provide training, documentation, and technical support during the installation, maintenance, and operation of SCADA and substation automation system equipment.

B) GENERAL ENGINEERING

- 1) Provide electrical engineering support to other departments.
- 2) Develop and update computer analysis programs or tracking systems for appropriate projects.
- 3) Provide technical assistance to substation operations and dispatch to troubleshoot and correct problems in substations and SCADA and substation automation systems.
- 4) Prepare information for permits on substation construction and operation.

C) OTHER

- 1) Participate in presentations, special projects, and assignments as directed.
- 2) Perform other duties as assigned.

QUALIFICATIONS

KNOWLEDGE, SKILLS AND ABILITIES

Thorough knowledge of applicable laws, codes, standards, and accepted safety practices relating to electrical utility work.

Demonstrated ability to read, interpret, and design protective relay and control schemes, one-line and three-line diagrams, and wiring diagrams.

Demonstrated knowledge of power system studies, substation, and SCADA, and substation automation system designs.

Demonstrated ability to perform complex power system fault analysis and protective device coordination studies.

Thorough knowledge and understanding of electrical engineering principles, practices, and procedures relating to substation, and SCADA, and substation automation systems.

Knowledge of engineering fundamentals, drawings, designing and mathematics.

Knowledge in the operation of personal computers and office equipment.

Ability to observe all health and safety regulations and use safety equipment when necessary.

Demonstrated ability to communicate effectively orally and in writing with all levels of the organization, contractors, and customers.

Demonstrated ability to complete assignments in a timely and accurate manner.

Ability to solve complex problems.

Ability to work under direct and indirect supervision.

Performance at this level requires developmental experience gained at the Substation Engineer I level or equivalent work experience.

EDUCATION AND EXPERIENCE

Bachelor of Science Degree in Electrical Engineering from an accredited college or university; or other combinations of education and/or experience which provides the necessary skills to perform professional electrical engineering work on electrical power systems.

4 – 7 years of relevant experience

OTHER REQUIREMENTS

Must possess a valid Washington State driver's license (out of state residents have 30 days from date of hire to obtain a valid Washington State driver's license) and qualify for the District's auto liability insurance.

WORKING CONDITIONS

Work is performed in an office and in the field. Individual may be exposed to conditions and hazards from brush, obstacles, debris, holes, fences, and open trenches associated with construction sites and/or rural areas of service; and to conditions and hazards associated with decrepit buildings. Individual is exposed to electrical high voltage lines.

Individual may be exposed to aggressive animals. This position may necessitate working beyond normal business hours. Overnight travel may be required.

PHYSICAL ACTIVITIES

This position requires periods of frequent sitting, standing, walking, lifting (50 pounds or less), crouching, bending, and travel to perform construction site inspection and reconnaissance activities in all types of weather conditions. These responsibilities could not be fulfilled by individuals with severe restrictions in mobility, sight, hearing, or speech.