



Code: 6088

Family: Technical Engineering
Service: Operation and Construction
Group: Engineering, Designing, and Structural
Series: Mechanical Engineering

CLASS TITLE: ENGINEER OF ELECTRICAL PUMPING STATIONS

CHARACTERISTICS OF THE CLASS

Under general supervision, directs the operations and maintenance of electrical equipment at the City's remote pumping stations, and performs related duties as required

ESSENTIAL DUTIES

- Inspects pumping station operations and makes staffing, equipment, and procedural changes to ensure operational efficiency and effectiveness
- Monitors staffing and ensures proper manpower coverage at each pumping station
- Analyzes failures of mechanical pumping equipment and determines scope of necessary repairs
- Establishes preventive maintenance schedules to ensure maximum effectiveness of equipment
- Supervises the maintenance and repair of pumping station equipment by operating engineers, private contractors, and/or electricians
- Reviews design plans and contract documents, cost estimates, and engineering calculations for electrical water pumping equipment prepared by consultants to ensure compliance with departmental design standards and specifications and sound engineering principles
- Supervises the development of specifications for new equipment purchases and interprets specifications to contractors
- Supervises the installation and testing of new and refurbished water pumping equipment
- Plans and directs improvements and modifications to computer hardware and software and electrical systems related to operational processes
- Programs software to control electric pumps
- Analyzes pumping rates and energy usage and recommends procedural changes to control energy costs
- Oversees the training of pumping station operators
- Directs the preparation of reports on operations and costs
- Oversees the maintenance of maintenance, repair, and energy usage records
- Researches new materials and techniques for use in installing, maintaining, and repairing pumping systems and equipment

NOTE: *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

MINIMUM QUALIFICATIONS

Education, Training, and Experience

- Graduation from an accredited college or university with a Bachelor's degree in Electrical or Mechanical Engineering or a related field of engineering, plus five years of experience in the planning, design, and operation of municipal water pumping systems, of which three years is in a supervisory role related to the responsibilities of the position; or an equivalent combination of education, training and experience provided that the minimum degree requirement is met

Licensure, Certification, or Other Qualifications

- Registration as a Professional Engineer (R.P.E.) in the State of Illinois is required

WORKING CONDITIONS

- General office environment
- Exposure to loud noise
- Exposure to hazardous conditions (e.g., heavy machinery)

EQUIPMENT

- Standard office equipment (e.g., telephone, printer, photocopier, fax machine, calculator)
- Computers and peripheral equipment (e.g., personal computer, computer terminals, hand-held computer, modems)
- Personal protective equipment (e.g., hard hat, shoes, glasses, gloves)
- Scientific calculators

PHYSICAL REQUIREMENTS

- Ability to climb staircases, ladders, and/or step stools

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS**Knowledge**

Comprehensive knowledge of:

- *electric water pumping station operations
- *pumping station electrical engineering methods, theories, principles, and procedures

Considerable knowledge of:

- water filtration and pumping system maintenance methods, practices, and procedures
- *supervisory methods, practices, and procedures
- applicable federal, state, local laws, regulations, and guidelines

Some knowledge of:

- budgetary preparation and planning
- contract administration procedures
- project costing, monitoring and reporting methods, practices, and procedures
- procurement processes (e.g., purchase of equipment, supplies, materials)
- *water treatment and purification operations
- safety principles, methods, practices, and procedures
- mechanical system installation and maintenance methods
- applicable mechanical engineering theories, principles, methods, and procedures
- *applicable computer software packages and applications

Knowledge of applicable City and department policies, procedures, rules, regulations, and ordinances

Skills

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- *CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- *MATHEMATICS - Use mathematics to solve problems
- *COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- MANAGEMENT OF MATERIAL RESOURCES - Obtain and see to the appropriate use of equipment, facilities, and materials needed to do certain work
- MANAGEMENT OF PERSONNEL RESOURCES - Motivate, develop, and direct people as they work and identify the best people for the job
- *COORDINATION WITH OTHERS - Adjust actions in relation to others' actions
- *INSTRUCTING - Teach others how to do something
- *SYSTEMS ANALYSIS - Determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes
- *OPERATION AND CONTROL - Control operations of equipment or systems
- *TECHNOLOGY DESIGN - Generate or adapt equipment and technology to serve user needs
- *TROUBLESHOOTING - Determine causes of operating errors and decide what to do about it

Abilities

- COMPREHEND ORAL INFORMATION - Listen to and understand information and ideas presented through spoken words and sentences
- SPEAK - Communicate information and ideas in speaking so others will understand
- COMPREHEND WRITTEN INFORMATION - Read and understand information and ideas presented in writing
- WRITE - Communicate information and ideas in writing so others will understand
- REASON TO SOLVE PROBLEMS - Apply general rules to specific problems to produce answers that make sense
- REASON MATHEMATICALLY - Choose the right mathematical methods or formulas to solve a problem
- VISUALIZE - Imagine how something will look after it is moved around or when its parts are moved or rearranged
- MAKE SENSE OF INFORMATION - Quickly make sense of, combine, and organize information into meaningful patterns
- COMPARE AND RECOGNIZE DIFFERENCES - Quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns (includes comparing a presented object with a remembered object)
- REACH CONCLUSIONS - Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)

Other Work Requirements

- PERSISTENCE - Persist in the face of obstacles on the job
- INITIATIVE - Demonstrate willingness to take on job challenges
- LEADERSHIP - Demonstrate willingness to lead, take charge, and offer opinions and direction

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- **COOPERATION** - Be pleasant with others on the job and display a good-natured, cooperative attitude
 - **INDEPENDENCE** - Develop own ways of doing things, guide oneself with little or no supervision, and depend mainly on oneself to get things done
 - **ANALYTICAL THINKING** - Analyze information and using logic to address work or job issues and problems
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All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards; and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

* May be required at entry.

City of Chicago
Department of Human Resources
(Valtera Corporation)

Date: June, 2010