



**Code: 6087**

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

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## **CLASS TITLE: ENGINEER OF WATER PUMPING**

### **CHARACTERISTICS OF THE CLASS**

Under direction, manages the operations and personnel of the City's pumping stations supplying water to the City of Chicago and various municipalities, and performs related duties as required

### **ESSENTIAL DUTIES**

- Directs unit supervisors in overseeing professional and skilled trades personnel in operating, maintaining, and repairing water pumping equipment and facilities
- Confers with station managers on the effectiveness of water pumping operations and station conditions and implements equipment and procedural changes to ensure efficiency of operations
- Directs the development of work standards and conducts performance evaluations of supervisory personnel
- Directs the inspection of water pumping equipment malfunctions and approves repairs
- Supervises the development of specifications for the acquisition and installation of new water pumping equipment
- Coordinates the contracting, purchase, installation, and testing of new and refurbished pumping equipment
- Directs the review of design drawings for new pumping station equipment or the refurbishment of existing equipment
- Directs the review of contract documents and engineering calculations prepared by contractors to ensure compliance with project specifications and sound engineering principles
- Determines and prioritizes facility and equipment repair, replacement, and maintenance schedules
- Approves equipment maintenance and replacement schedules to ensure minimal interruption of normal operations
- Oversees the analysis and resolution of complex equipment engineering problems
- Monitors projects assigned to staff and consultant engineers to ensure compliance with contract specifications, schedules, and budgets
- Directs the approval of payments to consultants and contractors for completed work
- Directs the development and implementation of safety programs and training for plant personnel
- Responds to emergencies involving water pumping operations
- Directs the maintenance of detailed records on equipment and power failures and the preparation of operational reports
- Directs the preparation of the annual budget for pumping operations and oversees its administration
- Directs the hiring and management of pumping station personnel
- Consults with other departments and agencies to coordinate work affecting pumping operations
- Researches new mechanical equipment and processes to improve water pumping operations
- Provides technical information on water pumping operations at regulatory proceedings

**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 directly related field of engineering, plus seven years of professional engineering work experience, of which five years is in a supervisory role involving the design, operation, and maintenance of water pumping stations in a large municipality; 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:

- \*applicable mechanical engineering theories, principles, methods, and procedures
- \*mechanical system installation and maintenance methods
- \* use of mechanical and hydraulic equipment for water pumping station operations
- \*procedures and methods for monitoring and maintaining equipment and instruments

Considerable knowledge of:

- \*management and supervisory methods, practices, and procedures

Moderate 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
- \*applicable electrical engineering methods, theories, principles, and procedures
- \*applicable federal, state, and local laws, regulations, and guidelines

Some knowledge of:

- applicable computer software packages and applications

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

Other knowledge as required for successful performance in the Assistant Engineer of Water Pumping class

### **Skills**

- \*ACTIVE LISTENING - Give full attention to what other people are saying, taking time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times
- \*CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- \*MONITORING - Monitor and assess performance of one's self, other individuals, or organizations to make improvements or take corrective action
- \*COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- \*MANAGEMENT OF FINANCIAL RESOURCES - Determine how money will be spent to get the work done and account for these expenditures
- \*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
- \*SYSTEMS ANALYSIS - Determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes
- \*SYSTEMS EVALUATION - Identify measures or indicators of system performance and the actions needed to improve or correct performance relative to the goals of the system
- \*QUALITY CONTROL ANALYSIS - Conduct tests and inspections of products, services, or processes to evaluate quality or performance
- \*TROUBLESHOOTING - Determine causes of operating errors and decide what to do about it

Other skills as required for successful performance in the Assistant Engineer of Water Pumping class

### **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
- MAKE SENSE OF INFORMATION - Quickly make sense of, combine, and organize information into meaningful patterns
- REACH CONCLUSIONS - Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)

Other abilities as required for successful performance in the Assistant Engineer of Water Pumping class

#### **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
- DEPENDABILITY - Demonstrate reliability, responsibility, and dependability and fulfill obligations
- ATTENTION TO DETAIL - Pay careful attention to detail and thoroughness in completing work tasks
- ANALYTICAL THINKING - Analyze information and using logic to address work or job issues and problems

Other characteristics as required for successful performance in the Assistant Engineer of Water Pumping class

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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.

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City of Chicago  
Department of Human Resources  
(Valtera Corporation)

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