

Code: 5520  
Operation and Construction Service  
Engineering, Designing and Structural Group  
Chemical Engineering Series

**CLASS TITLE: Filtration Engineer V**

**CHARACTERISTICS OF THE CLASS:** Under general supervision, the class supervises an engineering unit at one of the water purification plants and performs specialized filtration engineering work of a complex nature in connection with the operation, instrumentation and maintenance of water purification plant equipment and facilities; and performs related duties as required.

**ESSENTIAL DUTIES:** Supervises professional and skilled trades personnel engaged in monitoring water purification processes and adjusting pumpage rates and chemical dosages used to maintain water quality standards; inspects plant operations and makes staffing, equipment and procedural changes to ensure operational efficiency and effectiveness; evaluates laboratory reports on the analyses of water samples and makes changes to maintain specific water purification levels; reviews calculations of actual dosage rates of water purification chemicals ensuring their compliance with City and other governmental standards; directs the repair, replacement and calibration of malfunctioning instruments and controls on purification equipment; supervises the development of specifications for new equipment purchases and interprets specifications to contractors; supervises the ordering and maintenance of chemical inventories; supervises the installation and testing of new and refurbished equipment; keeps abreast of changes, trends and new equipment and chemicals in the field of water purification; recommends and implements improvements and modifications to existing chemical control processes; supervises the maintenance of plant records and the preparation of related reports; plans and supervises research studies pertaining to water purification processes; trains staff on work procedures and evaluates their performance.

**RELATED DUTIES:** Prepares grant applications to secure project funding; researches new materials and techniques for use in installing, maintaining and repairing filtration systems and equipment; conducts tours of water purification facilities for visiting engineers and dignitaries.

**MINIMUM QUALIFICATIONS:**

Training and Experience. Graduation from an accredited college or university with a Bachelor's degree in Chemical or Civil Engineering or a directly related field of engineering supplemented by four years of progressively responsible filtration engineering experience including one year of supervisory experience, or an equivalent combination of training and experience, provided the minimum degree requirement is met. A Class "A" Public Water Supply Operator license is required.

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CLASS TITLE:       **Filtration Engineer V (Cont'd)**

Knowledge, Abilities and Skill. Considerable knowledge of modern chemical engineering principles and practices. Considerable knowledge of filtration system maintenance methods. Considerable knowledge of water purification laws, codes and regulations. Some knowledge of supervisory and management theory and practices.

Ability to plan, assign, supervise and inspect the work of subordinate personnel. Ability to prepare clear and concise reports. Ability to analyze and resolve complex chemical engineering problems.

Considerable skill in the application of modern principles and practices of chemical engineering. Considerable skill in interpreting instrument panel readings and maintaining filtration equipment. Considerable skill in performing complex engineering calculations. Good skill in preparing specifications and cost estimates for equipment installation and maintenance projects. Good skill in coordinating the installation and testing of filtration equipment. Considerable analytical skills. Good oral and written communication skills. Some supervisory skills.

Physical Requirements. Ability to access filtration equipment and instruments on multiple levels.

Working Conditions. Inside: General office environment. Outside: Occasional exposure to inclement weather and extreme temperatures.

Equipment. Filtration monitoring and measuring instruments. Standard office equipment including personal computers.

NOTE:           While the list of essential duties is intended to be as inclusive as possible, there may be other duties which are essential to particular positions within the class.

May, 2002  
City of Chicago  
Department of Personnel