



**APPROVED BY: THE CHIEF  
ADMINISTRATIVE OFFICER**

**EFFECTIVE: March 2005**

**ASSOCIATE MECHANICAL ENGINEER  
ASSOCIATE ENGINEER (MECHANICAL)<sup>1</sup>**

*<sup>1</sup>Any incumbent who has not achieved registration as a Professional Mechanical Engineer in California will use this generic title, in accordance with the State of California Business and Profession Code.*

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.*

**DEFINITION**

To lead, direct, oversee and participate in the work of professional mechanical engineering staff responsible for the design, development, construction, installation and maintenance of mechanical equipment and systems in the District's water quality and water supply, storage, treatment and distribution facilities and plants; to ensure work quality and adherence to professional codes, standards and District specifications; and to perform a variety of professional services relative to assigned area of responsibility.

**DISTINGUISHING CHARACTERISTICS**

This is the journey level class within the professional Mechanical Engineer series. Incumbents in this class receive direction and exercise independent judgment in performing the full range of complex or difficult work. Employees at this level typically perform as project/program lead and may perform first supervisory level functions. Additionally, incumbents provide review of work for application of sound professional judgment and may exercise full technical and functional supervision for assigned projects and programs or serve as a resource for technical expertise. Typical duties and responsibilities require a broad knowledge of precedents in the specialty area and a good knowledge of principles and practices of related specialties. Assignments include

planning, scheduling, conducting or coordinating detailed phases of the engineering work in part of a major project or in a total project of moderate scope.

## **SUPERVISION RECEIVED AND EXERCISED**

Receives direction from higher level supervisory or management staff.

May exercise technical and functional supervision or direct supervision over professional and technical staff.

## **ESSENTIAL FUNCTION STATEMENTS**

*Essential responsibilities and duties may include, but are not limited to, the following:*

1. Lead, oversee and participate in the work of professional mechanical engineering staff responsible for the planning, design, development, construction, installation and maintenance of mechanical equipment and systems in the District's water quality, water supply, treatment and distribution facilities; scope of projects may include pumping stations, storage tanks, filtration and treatment plants, water transmission, piping systems and corrosion control programs; ensure work quality and adherence to professional specifications and established standards.
2. Coordinate, oversee, prepare and review mechanical engineering studies, reports, designs, drawings, specifications and related documentation; perform engineering design calculations and construction cost estimates; ensure all project and program designs, documents, and drawings and specifications comply with District and professional engineering principles, standards and practices.
3. Lead, oversee and participate in the planning and design of assigned mechanical engineering projects; prepare feasibility studies and cost estimates; develop and evaluate alternatives; define scope of work and develop conceptual plans; identify goals, standards, procedures and quality assurance standards for assigned projects; identify critical project issues; review and comment on consultant and environmental impact reports.
4. For positions which possess registration as a professional mechanical engineer, review engineering contract documents for compliance with professional mechanical engineering standards and principles; provide engineering certification on contract documents by stamping personal certification license number to assume project engineering liability and responsibility.
5. Prepare procurement specifications for mechanical systems and equipment; review and approve vendor designs and drawings to ensure compliance with District standards and

specifications; resolve vendor problems associated with equipment fabrication; inspect purchased equipment to ensure compliance with specifications.

6. Coordinate and participate in various engineering studies and related projects with District staff, outside agencies and consultants ensuring that deadlines, standards and specifications are met appropriately; ensure compatibility of various engineering components for overall project; prepare project schedules, resource needs estimates and cost projection estimates.
7. Participate in the preparation of project management plans, project plans, annual work plans, summary reports, project team mission statements, and project objectives, scope, sub-tasks, schedule, budget and resources as assigned.
8. Oversee mechanical engineering construction, installation or corrosion control projects; prepare project schedules; identify tasks and resources required; monitor project progress and prepare reports; provide technical support during project construction or installation including submittal review, requests for information from contractors, interpretation of project drawings, specifications and contract documents; assist in the inspection of contractor installations when necessary; perform project close out and maintain project files.
9. Provide technical support in administering, negotiating and resolving construction project change orders and construction claims; review change orders and claim requests and supporting drawings, specifications and related technical documentation; ensure work performed is in accordance with project plans, specifications and professional mechanical engineering standards and codes; make recommendations on claims resolution.
10. Participate in the negotiation and administration of consultant and professional services contracts; participate in the consultant selection process; participate in the development and negotiation of utility relocation agreements with other agencies/entities as assigned.
11. Assist in selecting, training, motivating and evaluating professional and technical personnel; provide or coordinate staff training.
12. Prepare and review a variety of engineering and administrative reports including agenda packets, permit applications and correspondence.
13. Represent the District in meetings or presentations to the general public, customers, consultants, vendors, contractors, zone advisory committees and other Federal, State and local agencies as assigned; prepare materials for public meetings and hearings; interact with the public and answer questions on technical, environmental, economic and social issues of a project.
14. Perform related duties and responsibilities as required.

## QUALIFICATIONS

### *Knowledge of:*

Operations, services and activities of a comprehensive mechanical engineering capital improvement program with emphasis on water transmission, distribution, treatment and pumping plant equipment and systems.

Advanced principles and practices of mechanical engineering systems and equipment design, construction and installation.

Mechanical engineering theory and design concepts for water transmission, distribution and treatment plant systems and equipment.

Mechanical system and equipment design, fabrication and installation methods, materials, specifications and codes.

Hydraulics, engineering mechanics and mechanics of materials.

Corrosion engineering principles, practices and technology.

Operational characteristics of water treatment and distribution pumping systems and equipment.

Principles and practices of project scheduling, management and budgeting.

Principles and practices of mechanical engineering and equipment fabrication cost estimating.

Methods and techniques of conducting site investigations and inspections.

Methods and techniques of evaluating and negotiating construction change orders and claims.

Terminology, methods, practices and techniques used in mechanical engineering report preparation.

Advanced engineering mathematics, economics and statistical analysis.

Methods and techniques of preparing mechanical engineering drawings, specifications, construction and installation plans.

Professional mechanical engineering principles, codes and standards.

Principles and practices of contract administration.

Principles of lead supervision and training.

Pertinent federal, state and local standards, codes, laws and regulations.

### *Ability to:*

Lead, coordinate and oversee mechanical engineering studies; planning, design, construction and installation projects; and programs.

Plan, direct, assign and review the work of assigned staff.

Oversee corrosion control projects and studies.

Apply engineering principles and computer programs to the solution of engineering problems.

Conduct various engineering studies and analyze the results to provide engineering solutions.

Prepare and interpret drawings, graphs, plans and specifications.

Interpret and prepare revisions to engineering plans, drawings and specifications.  
When serving in registered capacity, review and certify mechanical engineering plans, drawings, specifications and contract documents.  
Prepare a variety of technical and administrative reports and documents.  
Exercise sound independent judgment within procedural guidelines.  
Provide training and technical support to assigned staff.  
Set priorities and exercise sound independent judgment within established procedural guidelines.  
Participate in the administration and preparation of assigned contracts.  
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 Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

#### Experience

Two years of professional engineering experience at a level equivalent to that of the Assistant Engineer II (Mechanical) classification.

#### Training

Equivalent to a Bachelors degree from an accredited college or university with major course work in mechanical engineering or a related field;

#### OR

Possession of a valid California Engineer-in-Training (EIT) certificate with associated two years of paraprofessional engineering experience.

### **License or Certificate**

Registered positions within this classification must possess registration as a Professional Mechanical Engineer in the State of California.

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case by case basis at the time of job posting.

## **WORKING CONDITIONS**

### **Environmental Conditions**

Indoor environment; some positions require frequent field visits; travel from site to site; work closely with others and alone; exposure to computer screens; irregular work hours; some positions may involve exposure to inclement weather, dust, dirt, noise and other conditions associated with construction sites.

### **Physical Conditions**

Essential and other important functions may require maintaining physical condition necessary for sitting, walking and standing for extended periods of time; occasional moderate lifting and carrying.