



**APPROVED BY: THE CHIEF
ADMINISTRATIVE OFFICER**

EFFECTIVE: March 2005

**ASSOCIATE ELECTRICAL ENGINEER
ASSOCIATE CONTROL SYSTEMS ENGINEER
ASSOCIATE ENGINEER (CONTROL SYSTEMS/ELECTRICAL)¹**

¹Any incumbent who has not achieved registration as a Professional Control Systems or Electrical 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 control systems engineering or engineering staff responsible for the design, development, implementation, modification, installation, and maintenance of the District's computer-based process monitoring and control systems, and electronic or electrical systems in the areas of water production, treatment, and distribution and energy and water conservation; 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 Control Systems/Electrical Engineer series. Incumbents in this class receive direction and exercise independent judgement 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 judgement 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. Oversee and participate in the work of professional control systems engineering or electrical engineering staff responsible for the planning, design, development, implementation, modification, installation, operation, and maintenance of the District's computer-based process monitoring and control systems, and electronic or electrical systems in the area of water production, treatment, and distribution, and energy and water conservation; ensure work quality and adherence to professional codes, standards, and District specifications.
2. Coordinate, oversee, prepare, and review engineering studies, reports, designs, drawings, specifications, and related documentation; perform design calculations and project cost estimates; ensure all project and program designs, documents, and drawings and specifications comply with District and professional engineering principles, standards, and practices.
3. Oversee and participate in the planning and design of assigned engineering projects; prepare feasibility studies and cost estimates; develop and evaluate alternatives; identify and clarify design and implementation issues; 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 related reports generated by external sources.
4. For positions which possess registration as a professional control systems or electrical engineer, review engineering contract documents for compliance with professional engineering standards and principles; provide engineering certification on contract documents by stamping personal certification license number to assume project engineering responsibility.

5. Coordinate and participate in the 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.
6. 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; prepare project schedules; identify tasks and resources required; monitor project progress and prepare status reports; perform project close out and maintain project files.
7. Serve as technical resource on electrical and control systems problems in District plants and facilities; provide direction to operations and maintenance staff on problem resolution; conduct specialized electrical and control systems review studies; develop cost benefit analyses and make recommendations on engineering solutions.
8. Provide software support for supervisory control equipment used in water distribution systems and treatment plants; design new applications software and modify existing software; prepare operating procedure documents for new applications software and train staff as required.
9. Oversee control systems or electrical engineering projects; provide technical support during project design and implementation including design changes, submittal review, requests for information from contractors, interpretation of project drawings, specifications, and contract documents; assist in the inspection of contractor installations when necessary.
10. Provide technical support in administering, negotiating, and resolving contractor installation questions and project change order claims; review change orders and claims requests and supporting drawings, specifications, and related technical documentation; ensure work performed is in accordance with project plans, specifications, and professional engineering standards and codes; make recommendations for change orders and claims resolution.
11. Prepare and review a variety of engineering and administrative reports including agenda packets, permit applications, and correspondence.
12. Serve as District liaison with District electrical power suppliers; 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.

13. 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.
14. As assigned, perform control systems network administration duties; configure, program, test, install, and maintain networked control systems; connect peripherals to system; monitor system integrity; provide technical hardware and software support to users; identify, diagnose, and resolve technical problems.
15. Assist in selecting, training, motivating, and evaluating professional and technical personnel; provide or coordinate staff training.
16. Perform related duties and responsibilities as required.

QUALIFICATIONS

Knowledge of:

Operations, services, and activities of a comprehensive control systems and electrical engineering program including computer-based process monitoring and control systems, and electronic or electrical systems in the area of water production, treatment and distribution, and energy and water conservation systems.

Advanced principles and practices of control systems or electrical engineering design and installation.

Control systems and electrical engineering theory and design concepts for process control, electronic, and electrical systems.

Principles and practices of project scheduling, management, and budgeting.

Principles and practices of control systems network administration.

Operational characteristics of control systems hardware and software.

Principles and practices of engineering project cost estimating.

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

Terminology, methods, practices, and techniques used in control systems and electrical engineering report preparation.

Advanced engineering mathematics, economics, and statistical analysis.

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

Professional control systems and electrical 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 engineering studies; planning, design, and implementation projects; and programs.
Plan, direct, assign, and review the work of assigned staff.
Apply engineering principles and computer programs to the solution of engineering problems.
Conduct various engineering studies and analyze 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 control systems or electrical 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 (Control Systems/Electrical) classification.

Training

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

OR

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

License or Certificate

Registered positions within this classification must possess registration as a Professional Control Systems Engineer or a Professional Electrical 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.