



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

ASSOCIATE ENGINEER

Group-Section: Various	FLSA Status: Non-Exempt Bargaining Unit: AFSCME	Salary Grade: 50 Job #: YA26
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JOB SUMMARY

This is the journey level position performing Associate Engineer job duties.

DISTINGUISHING CHARACTERISTICS

Positions at this level are fully competent and use judgment in interpreting and adapting guidelines such as policies, regulations, precedents, and work directions for application to specific cases or problems. The decision regarding what needs to be done depends upon the analysis of the subject, phase, or issues involved in each assignment, and the chosen course of action may have to be selected from many alternatives. The work involves treating a variety of conventional problems, questions, or situations in conformance with established criteria.

OVERSIGHT

Supervision Received: The supervisor makes assignments by defining objectives, priorities, and deadlines; and assists employee with unusual situations that do not have clear precedents. The employee plans and carries out the successive steps and handles problems and deviations in the work assignment in accordance with instructions, policies, previous training, or accepted practices in the occupation. Completed work is usually evaluated for technical soundness, appropriateness, and conformity to policy and requirements. The methods used in arriving at the end results are not usually reviewed in detail.

Supervision Given: May act as a lead. May coordinate and review work assignments of employees performing the same general work as the lead on a day-to-day basis. Responsibilities may involve solving problems and providing instructions on work procedures.

JOB DUTIES

GENERAL

1. Performs and may lead the planning, coordinating, conducting, and monitoring tests, studies, investigations.
2. May represent Metropolitan within area of responsibility with external entities.
3. Prepares technical documents and reports; prepares and may make presentations.
4. Assists with Developing and administering contracts and agreements; reviews the work of vendors, consultants and contractors.
5. Plans and coordinates project tasks within area of responsibility, including monitoring scope, quality, budget, and schedule.
6. Provides technical expertise within area of responsibility on projects and issues.
7. Assists on special assignments in support of Metropolitan initiatives.

8. Performs technical analyses and provides recommendations to support planning, design, construction, infrastructure reliability and/or operational issues.
9. Prepares and reviews design criteria, plans, specifications, submittals, cost estimates, and budgets.
10. Assists with developing standards, procedures, guidelines, and manuals.
11. May execute mathematical, statistical, and other models.
12. Performs site and construction inspections.
13. May perform emergency response duties.
14. Maintains official records, documents, and data.
15. May participate on a project team.
16. Performs other related Engineer job duties as required.

SUBSTRUCTURES

1. Assesses potential impacts to facilities from proposed projects, coordinates reviews and provides recommendations.
2. Investigates facility issues and coordinates property issues; may negotiate changes to project.
3. Develops utility agreements with external entities to relocate or protect facilities.

HYDRAULICS

1. Designs and analyses of hydraulic facilities, structures, and conveyance and distributions systems; may utilize hydraulic modeling software.
2. Performs inundation studies for reservoirs and dams.
3. Prepares and reviews hydraulic plans and profiles and emergency dewatering profiles of reservoirs, pipelines and treatment plants.
4. Plans, coordinates, and conducts flow tests.

FACILITY PLANNING

1. Plans, coordinates, and conducts feasibility studies for treatment, distribution and conveyance facilities.
2. Assists with securing program and project authorization and funding.
3. Plans, coordinates, and conducts facility vulnerability studies.
4. Assists with developing infrastructure reliability design guidelines.

DESIGN

1. Prepares and may lead the review of engineering design criteria, calculations, plans, specifications, estimates and reports for water treatment, conveyance and distribution systems.
2. Provides and may lead technical support during construction.
3. May perform factory acceptance testing and systems start-up.
4. Performs investigations of existing facilities, structures, processes and equipment to resolve performance, operation or reliability issues.

PROGRAM MANAGEMENT

1. Participates on interdisciplinary teams assigned to projects; ensures compliance with project and customer requirements.
2. Development of scope, budgets, and schedules for projects; monitors expenditures, schedules, quality, and reporting.
3. Forecasts cash flow for projects.
4. May evaluate contractor claims, assists with negotiating settlements, and provides recommendations to management.

INSPECTION

1. Inspects and verifies contractor's work is in compliance with contract requirements.
2. Reviews submittals, Requests For Information, preparing responses, and Field Memorandums.
3. Reviews and accepts contractor plans, procedures, and schedules; prepares independent cost estimates and schedules; negotiates settlements.
4. Performs factory acceptance testing and systems start-up and coordinates warranty work.
5. Performs forensic investigations of construction deficiencies.

INFRASTRUCTURE

1. Develops, implements, and conducts infrastructure reliability assessments for safety, code, and regulatory compliance.
2. Develops, designs, recommends, and implements measures to prevent failure or rehabilitate assets.
3. Develops, implements, and conducts testing and monitoring of instrumentation programs.
4. Performs forensic investigations of materials and metallurgy issues.
5. Coordinates and resolves maintenance issues to ensure safety, code, and regulatory compliance.

SCADA

1. Performs factory acceptance testing and systems start-up.
2. Prepares Automatic Process Control and Programmable Logic Controller software design and operational documents.
3. Develops Automatic Process Control and Programmable Logic Controller program and simulation routines.
4. Provides SCADA system customer and infrastructure support, troubleshooting, and problem solving.
5. Plans, develops, and integrates SCADA hardware and software, configuration updates, and graphics changes.

WATER RESOURCES

1. Performs and may lead tasks related to implementing water resources programs and projects; may assist in securing program and project authorization and funding.
2. Reviews proposed regulations and legislation.
3. Assists in developing and may administer water resource contracts.
4. May assist in developing water resource management policy and procedures.
5. Assists in conducting feasibility studies for treatment, distribution and conveyance facilities, and may lead related tasks.
6. Executes and may develop mathematical, statistical, hydraulic, and water resource models.

POWER RESOURCES

1. Plans and performs energy scheduling for power operations.
2. Plans, analyzes, directs, or coordinates local and regional power activities.
3. Performs or participates in energy settlement and accounting activities.
4. Participates in power contract negotiations.
5. Solicits, analyzes, evaluates and executes power transactions within need, risk and credit guidelines.
6. Analyzes, evaluates, monitors, and makes recommendations regarding power related legislation, regulations, operations, and developments.
7. Monitors, evaluates, and documents power related regulatory performance and compliance.

PLANNING AND PROGRAMS

1. Develops, implements, and manages water supply and operations programs.
2. Prepares and analyzes short-term and long-term water demand forecasts.

3. Conducts water systems analyses to assess impacts of water quality, shutdowns, changes in demands and operational objectives.
4. Implements water systems operation strategies.
5. Monitors and evaluates water system activities of external entities for impacts to Metropolitan's water system operations and supply sources.
6. Assists with planning, coordinating, and conducts flow tests.
7. Develops system models and runs simulations.

WATER QUALITY

1. Monitors, evaluates, and responds to water quality related legislative initiatives, regulatory issues and policies. Develops plans and procedures to address legislative and regulatory requirements.
2. Reviews and makes recommendations on proposals, projects, and programs that may have an impact on water quality.
3. Develops and directs test plans for bench pilot and full scale water quality testing.
4. Analyzes and interprets data to develop water treatment process design criteria.
5. Analyzes and interprets data to optimize water quality performance and maintain compliance with drinking water quality regulations.
6. Analyzes and interprets conditions that may adversely impact watershed and source water quality.
7. Reviews and analyzes water quality data and provides recommendations to ensure compliance with all drinking water quality regulations.

OPERATIONS SUPPORT

1. Assesses maintenance and testing methods and impacts on operations and maintenance to improve efficiency and reliability.
2. Implements, maintains, and may develop analytical tools for the analysis and solution of engineering problems.
3. Analyzes equipment functions, evaluates potential failure modes and system impacts; makes recommendations.
4. Ensures compliance with project and customer requirements.
5. Leads field engineering tests and activities in connection with maintenance, inspection, and operations.

ENVIRONMENTAL

1. Oversees and prepares environmental, health and safety plans for regulatory compliance.
2. Analyzes new and proposed regulations and legislation; assists in the development of policies, procedures and training materials.
3. Plans, coordinates, and conducts environmental, health and safety audits; may develop mitigating or corrective actions.
4. Evaluates, applies for, modifies, and maintains environmental permits; may negotiate permits

EMPLOYMENT STANDARDS

MINIMUM QUALIFICATIONS

Education and Experience: Bachelor's degree from an accredited college or university in a related field and four years of relevant experience, of which two years must have been at the Assistant Engineer II level; or Master's degree from an accredited college or university in a related field and two years of relevant experience which must have been at the Assistant Engineer II level.

General Required Knowledge of: Engineering principles, practices and applications in specific discipline; project schedules and budgets; applicable federal, state and local laws, codes and regulations related to area of responsibility; and current office technology and equipment.

Substructures Required Knowledge of: Construction means and methods; construction equipment.

Hydraulics Required Knowledge of: Hydraulic modeling software; water treatment, conveyance and distribution systems and processes.

Facility Planning Required Knowledge of: Water treatment, conveyance and distribution systems and processes; facility planning, infrastructure reliability.

Design Required Knowledge of: Manufacturing and construction means, methods and equipment; applicable engineering design software.

Program Management Required Knowledge of: Manufacturing and construction means, methods and equipment.

Infrastructure Required Knowledge of: Risk and failure analyses.

Water Resources Required Knowledge of: Water resource issues; conveyance and distribution systems; groundwater, hydrology, hydraulics and water treatment processes.

General Required Skills and Abilities to: Analyze and interpret data; organize; project scheduling software; prepare technical reports and correspondence; use independent judgment and exercise discretion; problem solve; prioritize and multi-task; communicate clearly and concisely, both verbally and in writing; establish and maintain effective working relationships with those contacted in the course of work; work independently and in a team environment; and operate current office equipment including computers and supporting applications.

Job Title: Associate Engineer

Job Code: YA26

Adopted: 03/11/13

Revised:

Supercedes:

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Hydraulics Required Skills and Ability to: Conduct hydraulic analyses.

Design Required Skills and Ability to: Estimate; use engineering design software.

Program Management Required Skills and Ability to: Estimate and negotiate.

Infrastructure Required Skills and Ability to: Conduct risk and failure analyses.

Water Resources Required Skills and Ability to: Perform economical and statistical analyses of water resource programs; distribution system modeling.

CERTIFICATIONS, LICENSES, AND REGISTRATION REQUIREMENTS

Employees in this position may be required to obtain and maintain the following certifications, licensing and registrations:

Certificates

- Engineer in Training (EIT)

Licenses

- Valid California Class C Driver License that allows you to drive in the course of your employment

Registrations

- None

PHYSICAL DEMANDS, WORK ENVIRONMENT, AND VISION REQUIREMENTS

The physical demands and work environment characteristics described here are representative of those that must be met or may be encountered by an employee to successfully perform the job duties of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the job duties.

Physical Demands: The work requires some physical exertion such as long periods of standing; walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as personal computers and record boxes. The work may require specific, but common, physical characteristics and abilities such as above-average agility and dexterity.

Work Environment: The work involves moderate risks or discomforts that require special safety precautions, e.g., working around moving parts, carts, or machines, or irritant chemicals; etc. Employees may be required to use protective clothing or gear such as masks, gowns, coats, boots, goggles, gloves, or shields.

Vision Requirements: No special vision requirements.