



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

OPERATION SUPPORT SERVICES PRINCIPAL ENGINEER

Group-Section: Water System Operations Group - Operation Support Services Section	FLSA Status: Exempt Bargaining Unit: MAPA	Salary Grade: 064 Job #: 115
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JOB SUMMARY

Act as multi-discipline civil, mechanical, metallurgical, and structural engineering lead on operations and maintenance issues within the Operation Support Services Section. Principal Engineers within this classification provide complex technical expertise or project management at the highest technical levels found at Metropolitan. Their projects typically have the highest risk, are generally very fast-paced, complex, often are technically challenging, and crucial to water conveyance, treatment, storage, and distribution. They have, as a primary responsibility, the discernment of technical and project risk, and the mitigation thereof, in a broad technical setup encompassing several specialized fields, such that project success is assured at minimum cost.

OVERSIGHT

Supervision Received: Receives direction from the Team, Unit, Section, or Group Manager.

Supervision Given: May exercise technical and/or functional direction over assigned staff.

JOB DUTIES

1. Provides high-level, independent, and specialized expertise for more than one technical discipline such as civil, mechanical, metallurgical, and structural engineering, and other specialized areas such as, maintenance, construction, and manufacturing engineering. Solutions developed by this Engineer must be able to be manufactured immediately following a cursory review and, once installed, must be safe to operate and use.
2. Provides leadership to develop, improve, revise, and maintain standards (e.g., shop drawings, specifications, etc.); and works closely with team and unit managers. Must provide solutions to problems in manufacturing, fabrication, and installation processes and develops efficient standard procedures to avoid repeat of problems.
3. Evaluates, prepares, or directs the preparation of technical documents and reports for very fast-paced emergency, manufacturing, construction, and maintenance projects whose execution is often complex and often has safety design constraints (i.e. ensuring that staff and members of the public are kept safe, and that projects reach successful completion and function as designed). Reviews and evaluates job contracts and scopes, technical documents, and project plans for compliance with all internal and external public and industrial standards, guidelines, and objectives.
4. Schedules and assigns work activities; and provides technical guidance and training for work activities. Directs and provides technical guidance to Senior Engineers and high-level technical personnel. Responsible for technical direction and audits the effectiveness of projects, manufacturing processes, and quality assurance programs.

5. Reviews, evaluates, and approves drawings, specifications studies, and contracts from a maintenance and/or operations perspective with special emphasis on ease of construction and manufacturing to turn concepts into reality. Reviews designs for maintenance and operations effectiveness, thoroughness, and adherence to technical standards, codes, and Metropolitan procedures.
6. Provides technical leadership or acts as a project manager of the most complex multi-discipline projects or on multiple projects of moderate size cost. Responsible for lead direction of staff assigned, such as engineers, technicians, inspectors, and project administrative support. Attends consultant, contractor, and vendor meetings to resolve problems or outstanding issues.
7. Coaches, trains, and mentors employees on technical issues.
8. Performs feasibility and conceptual studies, detailed studies, evaluations, and assessments within their area of expertise.
9. Provides support to member agencies and the Department of Water Resources; provides technical assistance to engineering project staff, resident engineers, other groups, and outside agencies; and participates in technical steering committees and special studies.
10. Directs the production of or produces shop drawings (including size, form, and fit tolerancing), design reviews, bills of materials, calculations, inspection and test plan input, assessment of design related shop-floor non-conformances, and shop floor technical consultation.
11. Directs or technically oversees the refurbishment and modification or procurement of complex machines (high horsepower single and multi stage pump and turbine components), valves, gates, and related equipment including the assessment and repair of bladed components, large shafts, bearings, seals, and appurtenances. Creates, reviews, and assesses technical specifications for the maintenance and repair of equipment and related components. Coordinates with the other units to review customer designs and specifications.
12. Supports Engineering Design Unit when required to accelerate project work by preparing miscellaneous analyses including, but not limited to, stress, form, fit, function, buckling, and vibration and submit to appropriate units for checking.
13. Directs or develops plans, strategies, and solutions for problems and issues related to design integrity, safety, and shop production so that safe and effective planning is possible for the accomplishment of organizational objectives and full compliance with all applicable codes, the public, industrial standards, policies, rules, regulations, and laws. Such codes and standards involve Design Documentation (ASME, AISC, AWS, Boiler and Pressure Vessel Codes, ANSI, etc.).
14. Works with the appropriate managers (such as engineering, quality assurance, planning, project, and shop managers) in the development of the technical documentation that support Quality Management System goals; ensures minimal risk; can be accomplished efficiently in accordance with acceptable quality and technical standards; and meets industry codes, standards, applicable policies, rules, regulations, and laws.

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15. Interacts with outside mechanical, civil, and structural detailers to monitor and assess shop designs. This includes making and reviewing drawings, calculations, bills of materials, inspection, test plans, and special high tolerance part measurements having complex part interfaces.
16. Interfaces with Quality Control Inspectors to assess whether component parts and designs meet complex form and functional tolerance requirements. Utilizes and interprets data from coordinate measurement machines such that parts will fit up properly at job completion.
17. Performs other related duties as required.

EMPLOYMENT STANDARDS

MINIMUM QUALIFICATIONS

Education and Experience: Bachelor's degree from an accredited college or university and ten years of increasingly responsible experience, of which two years must have been at the Senior Engineer level.

Required Knowledge of: Selected elements of the following skills as applicable to specific area of expertise: principles of civil, mechanical, metallurgical, and structural engineering disciplines such as maintenance and manufacturing engineering; construction techniques; public works contract administration; quality control and quality assurance procedures; supervisory methods and techniques; Metropolitan's facilities, organization, policies, and procedures; principles of engineering design and standards of practice within discipline area; project management; water treatment plants and distribution systems; budgetary concepts and procedures; engineering economics; and administrative practices; federal, state, and local laws related to applicable engineering area.

Required Skills and Abilities to: Prepare correspondence and reports; resolve disputes, and negotiate contract changes; plan and work on multiple projects; communicate requirements, ideas, and information in a manner that elicits cooperation; resolve complex engineering problems; provide engineering discipline expertise; plan and organize the work of a project team; encourage and facilitate cooperation; lead, train, and mentor staff; exercise judgment and discretion; communicate orally and in writing on administrative and technical topics; use business, project management, and engineering applications; and determine training needs of staff.

CERTIFICATES, LICENSES, AND REGISTRATIONS REQUIREMENTS

Certificates

- None

Licenses

- Valid California Class C Driver License
- License in good standing as a California Professional Engineer

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Registrations

- None

DESIRABLE QUALIFICATIONS

None

PHYSICAL DEMANDS/WORK ENVIRONMENT

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 essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Physical Demands: The work is sedentary. Typically, the employee may sit comfortably to do the work. However, there may be some walking; standing; bending; carrying of light items such as paper, books, or small parts; driving an automobile, etc. No special physical demands are required to perform the work.

Work Environment: The work environment involves everyday risks or discomforts that require normal safety precautions typical of such places as offices, meeting and training rooms, libraries, and residences or commercial vehicles, e.g., use of safe work practices with office equipment, avoidance of trips and falls, observance of fire regulations and traffic signals, etc. The work area is adequately lighted, heated, and ventilated. May travel to various sites requiring overnight stay.

Vision Requirements: No special vision requirements