



JULY 2012
FLSA: EXEMPT

ENGINEER

This class specification indicates, in general terms, the type and level of work performed as well as the responsibilities of employees in this classification. The job functions described are not to be interpreted as being all-inclusive to any specific employee.

DEFINITION

Under general direction, performs a wide variety of complex engineering duties involving wastewater treatment and collection systems including design, project management, operational and compliance review, and permit issuance and enforcement; inspects and analyzes plant operations and implements process improvements; serves as a technical resource and advisor to assigned plant systems, and projects/programs; researches problems and conducts engineering related studies; and performs related work as required.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from assigned supervisory and/or management staff. Exercises no direct supervision of staff. May coach and/or mentor less experienced staff.

CLASS CHARACTERISTICS

This is the third level within the professional engineering job series that is in responsible charge of complex assignments, project, technical analyses, and programs requiring the full spectrum of knowledge, concepts, practices, procedures, and policies of engineering. Employees at this level are expected to be fully competent in all tasks related to assigned area of responsibility; serves as a technical resource and advisor; and provides guidance and training to less experienced staff. Responsibilities may include guidance on programs and/or projects and leads by example. The Engineer is distinguished from the Senior Engineer in that the Senior Engineer serves as a subject matter expert and advisor to management/staff; provides functional and technical leadership over other engineers, as well as technical and administrative staff; and is assigned to the most diverse, largest and/or most complex projects having significant organizational impact.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS (Illustrative Only)

Management reserves the right to add, modify, change, or rescind the work assignments of different positions and to make reasonable accommodations so that qualified employees can perform the essential functions of the job.

- Oversees assigned bid and proposal processes; prepares detailed drawings, technical specifications, and scopes of work; reviews proposals; selects consulting engineers; prepares agenda reports; establishes schedule and performance criteria; prepares purchase recommendations for construction/improvement projects and equipment.
- Performs various project management functions; selects and oversees project team members; prepares and monitors budgets; prepares designs and specifications; reviews and tracks the progress and work of consultants and contractors, ensuring project progress and completion in a timely manner and compliance with contract documents and regulatory permits; monitors project schedule; administers permits; ensures compliance with specifications; prepares budget, progress, and status reports;

- recommends modifications as necessary; issues non-compliance notices as necessary.
- Provides technical leadership and expertise in construction or design projects, and has full responsibility of project work assigned.
- Evaluates the design of complex engineering drawings, systems, and processes and oversees the design of engineering plans.
- Prepares complex engineering plan clarifications and changes in response to contractors' requests for information during construction of facilities and verifies that equipment meets design specifications and regulatory requirements.
- Provides design and construction engineering services in completing projects within approved budgets and schedules.
- Ensures established District standards, policies and procedures, and engineering best practices are consistently applied.
- Prepares a variety of administrative, technical, and budget reports, memos, letters, and other related correspondence.
- Inspects, diagnoses, and develops corrective action plans for complex plants, pump stations, and collection systems for operation and maintenance problems.
- Reviews plans and technical specifications and provides input on functional aspects of proposed plant and collection facilities as well as rehabilitation projects.
- Reviews plants, pump stations, and collection system processes, discusses with staff how to take or direct corrective action, and coordinates operational and/or maintenance activities to optimize wastewater process.
- Oversees the design, replacement, rehabilitation, and abandonment of plant process areas, collection facilities, and pump stations; analyzes and performs optimization studies of various chemicals, unit processes, odor control, and utilities.
- Oversees research for air pollution control and implementation; develops and manages emission modeling systems and testing programs.
- Provides corrosion engineering support; conducts and reviews failure analyses; reviews lab reports; monitors and controls chemicals; prepares recommendations for appropriate action.
- Performs complex power system studies of electrical equipment to determine how modifications affect the systems and to plan future growth.
- Performs engineering calculations and analysis for project and process monitoring and control, and equipment replacement.
- Prepares memos and technical reports regarding wastewater treatment management and air quality management; develops, manages, analyzes, and utilizes relevant database systems and recommends methods to meet compliance requirements.
- Oversees and provides review of various budget preparation and reports.
- Issues residential, commercial, and industrial connection permits, as well as Approval and Clearances for those projects that do not require permits, for areas where the District is the local sewer service provider.
- Reviews and evaluates plans of proposed connections to District facilities; issues connection permits as necessary.
- Coordinates projects with member agencies regarding preliminary negotiation, agreement development, right of way requirements, and plan review.
- Provides support to internal District clients with various research and plan reviews.
- Processes easements, grant deeds, agreements, and permits during the preparation of contract bid documents for the construction of wastewater treatment facilities.
- Performs utility searches and resolves complex utility location conflicts during the construction of facilities.
- Issues and renews industrial wastewater discharge permits to industrial facilities; performs evaluations of the permit applications and design drawings; monitors discharge through routine and downstream sampling results review and evaluation; finalizes permit requirements and ensures compliance through enforcement of permit provisions and discharge limits.

- As a technical advisor, manages SCAQMD permits; establishes permit conditions on new permits; communicates permit compliance requirements to operations and maintenance departments; develops auditing programs; and audits compliance activities.
- Interacts with industrial permittees and the public, both in person and by telephone; responds to permittee requests regarding regulatory permit and enforcement issues.
- Monitors compliance and regulatory conformity by sampling and reviewing wastewater treatment processes and the treatment facilities' removal efficiencies and discharge data.
- Conducts technical facility inspections to assess and verify permit application information; assesses the cause of violations.
- Implements permittee industrial sampling and monitoring programs; evaluates sampling and monitoring data to determine compliance; implements enforcement actions; performs evaluations of compliance histories; determines the level of enforcement to be taken.
- Processes easements, grant deeds, agreements, and permits during the preparation of contract bid documents for the construction of wastewater treatment facilities.
- Resolves more complex utility location conflicts during the construction of facilities.
- Determines, develops, and implements regulatory programs targeted at the discharger community as well as at internal work processes that eliminate pollution discharge into the District's sewerage systems and ensures the District's compliance with various regulatory requirements.
- Analyzes, interprets, and explains regulations and policy affecting pretreatment.
- Prepares emergency preparedness plans and training procedures.
- Oversees the start-up of facilities; participates in staff training.
- Tracks new legislative and regulatory developments related to compliance; develops and implements conformity documents, policies, and procedures; implements new regulatory requirements; and participates in studies conducted by the EPA and other regulatory agencies.
- Participates in the development of policies, procedures, and standards.
- Provides technical assistance and support to engineers and engineering aides; provides technical training as appropriate.
- Prepares a variety of administrative, technical, and budget reports, memos, letters, and correspondence.
- Represents the District with regulatory agencies, public, contractors and consultants.
- When assigned to programs and/or projects, provides leadership and guidance to others. As a program and/or project leader, may direct, assign, train, monitor and review the work activities of team members; determines work priorities; oversees quality and quantity of work performed and ensures adherence to established procedures by instructing employees accordingly; is a reference to employees by possessing specialized skills; develops and implements work improvements.
- Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of engineering; researches emerging products and enhancements and their applicability to District needs.
- Performs related duties as required.

QUALIFICATIONS

Knowledge of:

- Modern and complex principles and practices of civil, electrical, mechanical, environmental, structural, or control systems engineering.
- Principles, practices, policies, and procedures of construction and project management.
- Principles and applications of critical thinking and analysis.
- Operations of wastewater management systems and flow regimes.
- Principles of air dispersion, fate-transport, interceptor odor, and health risk analysis modeling.
- Methods and techniques of engineering plan review and analysis.
- Project management and contract negotiation and administration principles and techniques.
- Principles and practices of field surveying.

- Applicable Federal, State, and local laws, regulatory codes, ordinances, and procedures relevant to assigned area of responsibility.
- Modern office practices and technology, including personal computer hardware and software applications related to the work, such as computer-aided drafting (CAD) concepts and applications and Geographic Information Systems (GIS) programs.
- Modern developments, current literature, and sources of information regarding engineering.
- Principles of advanced mathematics and their application to engineering work.
- Principles of chemistry and biology as applied to wastewater treatment.
- Practices of researching engineering and design issues, evaluating alternatives, making sound recommendations, and preparing and presenting effective staff reports.
- Methods and techniques of effective technical report preparation and presentation.
- English usage, grammar, spelling, vocabulary, and punctuation.
- Techniques for providing guidance and training to less experienced staff.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and District staff.

Ability to:

- Lead subordinate-level staff on programs and projects.
- Demonstrate safe work practices and procedures in the workplace.
- Resolve conflict through supervision in establishing workable solutions and alternative approaches.
- Inspect the work of others and maintain established quality control standards.
- Train others on proper work procedures and lead by example.
- Identify and implement effective course of action to complete assigned work.
- Apply critical thinking and analysis to a broad range of situations.
- Use critical thinking techniques in reaching independent decisions.
- Perform a variety of complex professional engineering functions.
- Conduct engineering research projects, analyze problems, evaluate alternatives, make sound recommendations, and prepare effective technical staff reports.
- Prepare, understand, and interpret engineering construction plans, specifications, and other contract documents.
- Inspect public works projects for conformance with plans and specifications.
- Prepare bid documents, contract documents, specifications, cost estimates, and engineering drawings.
- Prepare and implement project budgets.
- Conduct engineering studies and prepare reports with recommendations.
- Develop and administer contracts for professional services and construction.
- Interpret, apply, explain, and ensure compliance with Federal, State, and local policies, procedures, laws, rules, and regulations.
- Identify problems, research and analyze relevant information, develop and present recommendations and justification for solution.
- Use critical thinking techniques in determining problem resolutions.
- Read and understand technical drawings and specifications.
- Recognize discrepancies from as-built to contract specifications and recommend reconciliation.
- Perform mathematical and engineering computations with precision.
- Make engineering design computations and check, design, and prepare engineering plans and studies.
- Recognize and properly deal with hazardous materials/environments.
- Run various air dispersion, fate-transport, interceptor odor, and health risk analysis models.
- Effectively represent the department and the District in meetings with governmental agencies, community groups, and various business, professional, and regulatory organizations and individuals.
- Prepare and present clear, concise, and logical written and oral reports, correspondence, policies, procedures, legal descriptions, and other written materials.
- Maintain confidentiality in maintaining critical and sensitive information, records, and reports.
- Establish and maintain a variety of filing, record-keeping, and tracking systems.

- Make sound, independent decisions within established policy and procedural guidelines.
- Organize and prioritize a variety of projects and multiple tasks in an effective and timely manner; organize own work, set priorities, and meet critical time deadlines.
- Operate modern office equipment including computer equipment and specialized software applications programs.
- Use English effectively to communicate in person, over the telephone, and in writing.
- Use tact, initiative, prudence, and independent judgment within general policy and legal guidelines.
- Establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.

Employment Standards:

Any combination of education and experience that provides the required knowledge, skills, and abilities may be qualifying as determined by OCSD.

1. Possession of a bachelor's degree from a college or university which is accredited by the US Department of Education, with major coursework in engineering, or a related field; AND,
2. Five (5) years of increasingly responsible engineering experience.

Licenses and Certifications:

- Possession of, or ability to obtain, a valid California Driver's License by time of appointment.
- Possession of a professional engineering registration from the State of California.

Disaster Service Workers:

All Orange County Sanitation District employees are designated Disaster Service Workers through state law (California Government Code Section 3100-3109). Employment with the Orange County Sanitation District requires the affirmation of a loyalty oath to this effect. Employees are required to complete all related training as assigned, and to return to work as ordered in the event of an emergency.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer, to inspect District development sites, including traversing uneven terrain, climbing ladders, stairs, and other temporary or construction access points, to operate a motor vehicle, and to visit various District and meeting sites; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the telephone. This is primarily a sedentary office classification although standing in and walking between work areas and to conduct inspections may be required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects weighing up to 25 pounds.

ENVIRONMENTAL ELEMENTS

Employees work in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may work in the field and occasionally be exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.