ORANGE COUNTY SANITATION DISTRICT

SEPTEMBER 2022
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 direction, performs a variety of complex and responsible engineering duties in the planning, design, construction, operations, and compliance of wastewater facilities, infrastructure, systems, and programs; oversees development of engineering designs and provides project management of assigned programs and projects; inspects and analyzes plant operations and implements process improvements; enforces industrial wastewater discharge regulations and reviews, processes, and approves assigned permits; serves as a technical resource and advisor on assigned projects, programs, and systems; researches complex engineering issues and conducts engineering-related studies; and performs duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

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

CLASS CHARACTERISTICS

This classification is the third of four levels within the professional engineering job series. Incumbents at this level perform the more difficult assignments, projects, analyses, and programs, exercise considerable discretion and independent judgment in performing assigned work, and possess thorough knowledge of the concepts, practices, procedures, and policies of engineering in assigned disciplines. Assignments are given with general guidelines and incumbents are responsible for establishing objectives, timelines, and methods to deliver work products or services. Work is typically reviewed upon completion for soundness, appropriateness, and conformity to policy and requirements. Responsibilities include providing guidance on programs and/or projects; and may include providing coaching and mentoring to lower-level staff. This class is distinguished from the Senior Engineer in that the latter is responsible for developing, implementing, and managing the most complex programs and projects, serving as an expert internal consultant, and providing functional and technical direction to assigned staff.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS (Illustrative Only)

The following essential job functions are typical for this classification. Incumbents may not perform all of the listed job functions and/or may be required to perform additional or different job functions from those set forth below to address business needs and changing business practices.

- Performs a variety of complex professional engineering duties in the planning, design, construction, operations, and compliance of wastewater facilities, systems, and programs; oversees and/or prepares, reviews, evaluates, and provides comment on detailed designs, drawings, technical specifications, and scopes of work for engineering projects.
- Monitors the condition and performance of OC San assets and infrastructure; maintains an asset registry of OC San's critical assets; works closely with Operations and Maintenance staff to identify field issues

and evaluate solutions to resolve these issues; develops short to long-term planning for assets maintenance, rehabilitation and replacement; identifies, packages and prioritizes new capital projects.

- Conducts engineering research, studies, calculations, analysis, and system and process modeling within specialized area of assignment; compiles data, reviews reports, and monitors processes; prepares a variety of correspondence, memoranda, and technical reports related to area of assignment.
- Performs a variety of project management activities; reviews proposals, selects consultants, and prepares agenda reports; establishes project schedule and performance criteria; oversees work of project team members; prepares, oversees, and monitors budgets; reviews and tracks the progress and work of consultants and contractors, including meeting project milestones and key deadlines; ensures compliance with contract documents and regulatory permits.
- Prepares complex engineering plan clarifications and changes in response to contractors' requests for information; verifies work and equipment meets design specifications and regulatory requirements.
- Prepares and issues field change orders; analyzes and negotiates change order requests and claims; recommends modifications as necessary; issues non-compliance notices as necessary; facilitates project meetings and produces minutes.
- Processes a variety of regulatory and compliance documents; coordinates with regulatory agencies regarding right of way requirements and plan review; drafts easements, grant deeds, agreements, and permit applications.
- Coordinates and participates in commissioning activities, acceptance testing, and reliability acceptance testing; actively troubleshoots issues as they arise.
- Reviews plants, pump stations, and collection system processes; coordinates operational and/or maintenance activities to optimize wastewater process; and inspects, diagnoses, and develops corrective action plans to address operation and maintenance problems.
- 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.
- Reviews and evaluates plans of proposed connections to OC San facilities; issues residential, commercial, and industrial connection permits.
- Issues and renews industrial wastewater discharge permits to industrial facilities; evaluates permit applications and design drawings; conducts facility inspections and monitors discharge through routine and downstream sampling; finalizes permit requirements and ensures compliance through enforcement of permit provisions and discharge limits.
- Provides technical advice and oversees air quality permits; establishes permit conditions; communicates permit compliance requirements to operations and maintenance departments; develops auditing programs and audits compliance activities.
- Determines, develops, and implements regulatory programs targeted at the discharger community to eliminate pollution discharge into OC San's sewage systems; ensures OC San's compliance with various regulatory requirements.
- Ensures established OC San standards, policies, and procedures, and engineering best practices are consistently applied throughout assigned projects; analyzes, interprets, and explains various regulations and policies related to area of assignment; tracks new legislative and regulatory developments; develops and implements a variety of documents, policies, and procedures.
- Provides leadership and guidance to others on programs and/or projects; 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 resource to employees by possessing specialized skills; and develops and implements work improvements.

- Represents OC San with regulatory agencies, public, contractors, and consultants; 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 OC San needs.
- Programs, tests, and commissions complex control systems.
- Maintains the plant and pump station control system and supports operations and maintenance requested changes; supports operations and maintenance with troubleshooting and modifying existing systems; provides training to operations and maintenance staff.
- Ensures safety and health procedures and precautions are adhered to, corrects unsafe work conditions/practices, and/or reports unsafe work conditions/practices to assigned supervisory or managerial staff.
- Performs duties as assigned.

QUALIFICATIONS

Knowledge of:

- Applicable federal, state, and local laws, codes, and ordinances relevant to area(s) of responsibility.
- Modern and advanced principles and practices of civil, electrical, mechanical, chemical, environmental, structural, and/or control systems engineering.
- Principles and practices of engineering design and plan review and analysis.
- Principles and practices of asset management.
- Principles and practices of construction and project management including budget and contract management.
- Operations of wastewater management systems, including air pollution, solids management, odor control, and flow regimes.
- Principles of air dispersion, fate-transport, interceptor odor, and health risk analysis modeling.
- Computer-aided drafting (CAD) concepts and applications and Geographic Information Systems (GIS) programs.
- Principles and applications of critical thinking and analysis.
- Principles of advanced mathematics and their application to engineering work.
- Techniques for providing guidance and training to less experienced staff.
- Principles and techniques for working with groups and fostering effective team interaction to ensure teamwork is conducted smoothly.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Current equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.
- Human machine interface (HMI) programming and configuration.
- Programmable logic controller (PLC) and distributed control system (DCS) programming using ladder logic and function block.

Ability to:

- Conduct complex engineering research projects and studies, analyze complex engineering, operations, and/or compliance problems, evaluate alternatives, make sound recommendations, and prepare effective technical staff reports.
- Prepare, understand, and interpret engineering designs, construction plans, technical drawings, specifications, and other contract documents.
- Inspect public works projects for conformance with plans and specifications.
- Develop and implement project budgets and professional services agreements including preparing bid documents, contract documents, and cost estimates.
- Make engineering design computations and check, design, and prepare engineering plans and studies.

- Recognize and properly address hazardous materials/environments.
- Run various air dispersion, fate-transport, interceptor odor, and health risk analysis models.
- Establish and maintain a variety of filing, record keeping, and tracking systems.
- Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed.
- Lead, direct, and review the work of project staff; and train others on proper work procedures.
- Perform complex mathematical and engineering computations with precision.
- Effectively represent the department and OC San in meetings with governmental agencies, community groups, various business, professional, regulatory organizations, and in meetings with individuals.
- Operate a motor vehicle and travel to various OC San sites, projects, and/or meetings.
- Independently organize work, set priorities, and meet critical deadlines.
- Use tact, initiative, prudence, and independent judgment within general policy, legal, and procedural guidelines.
- Comply with safe work practices and procedures in the workplace.
- Provide a high level of customer service by effectively dealing with the public, vendors, contractors, and OC San staff.
- Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
- Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
- Establish, maintain, and foster positive and effective 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 OC San.

1. Bachelor's degree from a college or university accredited by the U.S. Department of Education, with major coursework in civil, mechanical, chemical, electrical, or environmental engineering, or a related field, dependent upon area of assignment.
2. Four (4) years of increasingly responsible professional engineering work experience.

Licenses and/or Certifications:
- Must possess a valid California Class C Driver's License.
- Must possess a valid registration as a professional engineer (P.E.) in 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

- Mobility to work in a standard office setting and use standard office equipment, including a computer; to operate a motor vehicle and visit various OC San sites, projects, and/or meetings; primarily a sedentary office classification although standing in work areas and walking between work areas may be required; occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information; ability to lift, carry, push, and pull materials and objects up to 35 pounds.
- Mobility to work in changing site conditions; to sit, stand, and walk on level, uneven, or slippery surfaces; to reach, twist, turn, kneel, and bend, to climb and descend ladders.

- Perform light physical work; lift, carry, push, and pull materials and objects averaging a weight of 51 pounds, or heavier weights, in all cases with the use of proper equipment and/or assistance from other staff.
- Vision to read printed materials and a computer screen.
- Vision to inspect site conditions and work in progress.
- Hearing and speech to communicate in person and over the telephone.
- Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment.
- Frequent walking in operational areas to identify problems or hazards.
- Climb ladders, install cabling, work around and in low voltage field control panels and hardware; use electrical and networking test equipment; use tools to remove, install and test equipment including servers, network equipment, power supplies, fiber optics and cabling.

ENVIRONMENTAL ELEMENTS

- Office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances.
- Field work with exposure to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, chemicals, mechanical and/or electrical hazards, hazardous physical substances and fumes, dust, and air contaminants.
- Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

OTHER REQUIREMENTS

- Probationary Period: All OC San employees, except classifications considered "at-will", are subject to the probationary period provisions as specified in the applicable Memorandum of Understanding, policies, and/or resolutions. Employees who have not yet successfully completed their initial probationary period serve "at-will" and may be released from employment without cause or recourse to any appeal or grievance procedures.
- Pre-Employment: All employment offers are contingent upon successful completion of OC San's pre-employment process, which includes a background investigation, a physical examination, and a drug screen.
- Work Location Assignment: Employees will be assigned to a work location based on business needs which may be located at any/all of OC San locations; this work location may be changed at any time.