



East Contra Costa Irrigation District

SYSTEM OPERATOR/ MAINTENANCE WORKER I / II / III

DEFINITION

Under general supervision, operates, inspects and performs routine to skilled maintenance on a variety of pumps, motors, gates, screens and related facilities and equipment found in the main production canal and/or related lateral distribution facilities for the provision of agricultural water to a variety of customers; performs related work as assigned.

CLASS CHARACTERISTICS

This is a multi-level class in which incumbents operate and maintain one or more of the water delivery systems of the District:

- 1) The Main Canal and associated pumps and facilities.
- 2) The North-Side lateral distribution system.
- 3) The South-Side lateral distribution system.

Incumbents begin at the level I, during which they learn the operation of one of the three portions of the system noted above. Upon becoming fully proficient in the operations of two systems, incumbents may progress to the level II. When an incumbent is fully competent and has demonstrated the skills and knowledge to independently operate the main canal and both of the lateral systems, they may be progress to the level III. All levels perform a variety of routine to skilled maintenance and construction work on all District facilities.

EXAMPLES OF ESSENTIAL DUTIES

ESSENTIAL:

- Reviews daily water delivery work orders; plans delivery route and schedule to make the most efficient and effective delivery to meet customer's needs.
- Operates pumps, motors, gates and similar equipment to deliver water, based upon the area of the system to which assigned; maintains accurate records of water delivered.
- Operate and monitor SCADA system.
- Maintains basic records of work performed.
- Read gauges and meters or measures water heads to ensure appropriate delivery of water, depending upon the area of the system to which assigned.

- Inspect equipment, gates and canals for problems, leaks, etc.; during operating season makes minor adjustments and emergency repairs and reports the need for more extensive repairs.
- Clears plant growth, trash and other materials from central canal and lateral distribution facilities and equipment; may apply herbicides and take animal control measures as assigned.
- Performs a variety of troubleshooting and maintenance work on a variety of facilities and equipment; may perform skilled welding, construction, electrical or other specialized maintenance and repair work as required.
- Drives a motor vehicle in the performance of the work.
- Operate a variety of construction equipment during maintenance and construction activities.
- Enter and perform work inside confined spaces such as pipes, culverts and below grade structures.
- Responds to emergency calls in off-hours as required.

SKILLED IN:

- Operating a variety of facilities and equipment used in the production and distribution of irrigation water.
- Operating and maintaining a variety of hand and power tools used in maintenance and construction work including heavy equipment.
- Understanding and following oral and written instructions.
- Maintaining accurate basic records of work performed.
- Using initiative and sound independent judgment without close supervision. Establishing and maintaining effective working relationships with those contacted in the course of the work.

TYPICAL PHYSICAL AND MENTAL ACTIVITIES

- Make good judgment decisions involving the use of safe and proper work procedures and relative to the order in which irrigation deliveries are accomplished.
- Employees in this class are required to enter confined spaces such as pipes, culverts, and miscellaneous structures to perform repair work and cleaning. Conditions in these spaces while squatting, crawling and climbing into pipelines can be humid, muddy, wet and contain foul odors.
- While in a sitting position, operate District vehicles to patrol ditches, pipelines and other conduits and facilities and travel between water delivery and control points for periods of approximately 8 to 12 hours per day. Areas traveled will vary from place to place, subsequently, the employee may be exposed to rough and rutted roadways and to dust and noise.
- Employees may stand intermittently for durations ranging up to 10 to 15 minutes at each occurrence for approximately 4 to 5 hours or more per day. Standing will occur intermittently with walking, sitting, kneeling, squatting, crawling, and climbing.

- Job requires intermittent walking for brief to moderate durations for a total of 4 to 6 hours or more per day. Distances walked will range from a few feet to as much as a quarter mile at each occurrence. Walking surfaces will often be irregular, sloping, wet to dry, smooth to broken, and over and across narrow walkways.
- In the performance of tasks such as opening and closing irrigation gates and insertion and removal of weir boards, it will be necessary for the employee to kneel, squat, crawl and climb. Each such demand is intermittent and totals 30 to 45 minutes or more per day. These functions will be performed on a variety of work surfaces including dirt, pavement, and metal grating and may occur on sloping and narrow surfaces requiring a great deal of balance.
- Occasionally it will be necessary for the employee to lay on their back or stomach and to crawl, especially when they must reach for something in a canal or get under a customer's fence enclosure.
- Movements such as reaching, pushing/pulling, twisting, bending, crawling, stooping, lifting, carrying, gripping, and grasping are frequently performed by SO/MWs (System Operator/Maintenance Worker) and will each total approximately 1 to 3 hours or more per day. Tasks such as pulling debris, opening and closing access gates, opening and closing large canal gates and pulling weir boards frequently require that these movements be performed in conjunction with one or more of the other tasks.
- Additionally, the employee may also use his hands and arms as well as feet and legs to push and pull the above described tasks.
- Twisting of the wrist and elbows, the upper torso and knees and ankles will occur when the employee performs routine tasks such as the manipulation of gates that are of the larger variety.
- Stooping or bending at the waist may be performed while the employee is in a great many positions, including standing, kneeling, and squatting and the duration of such movement range from 1 to 5 minutes at each occurrence.
- Most lifting will be performed in conjunction with reaching, pushing, pulling, stooping and gripping/grasping and will generally involve weights of less than 50 pounds; however, the employee may need to lift weights up to a maximum of 100 pounds.
- The employee may hand-carry items over a variety of surfaces ranging from smooth and level to sloping and broken, dry to wet. The items being carried will normally be less than 20 pounds; however, they may range up to 100 pounds. Distances will not normally exceed 50 feet when at the heavier loads, however on occasion the employee may carry lighter items up to as much as one-quarter of a mile.
- Gripping and grasping will primarily be of a firm nature for brief to moderate durations ranging for up to 5 minutes at each occurrence.
- In the operation of vehicles, manipulation of gates and weirs and in the performance of other related duties an employee will perform strenuous

- intermittent neck motion and flexion for moderate durations for a total of 6 to 8 hours per day.
- The employee will perform intermittent finger manipulation and some fine finger dexterity movements when using the phone to dial and text communicate with customers and staff and to complete written reports for a total of 2 to 3 hours or more per day.
 - Continuous normal or corrected-to-normal hearing and vision are required to perform the tasks associated with this work.
 - Read and speak in English at a level sufficient to communicate effectively over the phone, by e-mail and text message or in person.
 - Read, understand and follow instructions, either written in English or verbally presented in English, which cover the safe use and handling of chemicals and which are prepared to insure the safe and efficient completion of daily work assignments.

QUALIFICATIONS

KNOWLEDGE OF:

- Operation and maintenance of a variety of pumps, motors, gates and other stationary motorized equipment.
- Methods, tools, and materials used in the operation, maintenance and repair of irrigation water distribution facilities and equipment.
- Operation of heavy equipment
- Record-keeping and reporting procedures.
- Laws and regulations pertaining to the work.
- Safety practices pertaining to the work.
- Basic concepts of electricity and electronics.

ABILITY TO:

- Learn and use good judgment in the implementation of District policies and procedures with respect to the Essential Duties of a SO/MW and the conveyance and distribution of irrigation water.
- Work without direct supervision.
- Establish and maintain cooperative relationships with those contacted during work.
- Operate trucks and other construction equipment and tools.
- Perform heavy manual labor in the control/operation of gates, valves, and in the use of hand tools such as shovels and an assortment of specialty devices used to open and close in-line valves.
- Lift and hand-carry items over a variety of work surfaces ranging from smooth and level to sloping and broken, dry to wet. The items being carried will normally weigh less than 20 pounds; however, they may range up to 100 pounds. Distances will not normally exceed 50 feet when carrying the heavier loads, however, on occasion the employee may carry the lighter items for up to one-quarter of a mile.

- Walk on sloping and irregular work surfaces, climb fences and ladders, and bend, reach, and pull/push in the operation of gates.
- Read, communicate, understand and carry-out oral and written directions in English.
- Perform mathematical calculations involving addition, subtraction, multiplication, and division.
- Read, understand and relate water measurement “tables” to manually measured and observed field conditions and situations.
- Perform work on elevated work surfaces, within confined spaces, in the office, in assigned vehicle, under day light and nighttime conditions, and out in the field under varying weather conditions.

EXPERIENCE, EDUCATION AND LICENSES:

EXPERIENCE

Any combination of education and experience that would likely provide the knowledge, skills and abilities to perform the functions of the position.

EDUCATION

Equivalent to the completion of the twelfth grade. Significant relevant work experience may be substituted for some education requirements at the discretion of the District.

LICENSES

Must possess a valid California driver’s license. A California Class A or B Commercial Driver’s License is desirable.

OTHER REQUIREMENTS

Must be available to work extended and off-hours shifts during operating season or in emergency circumstances.

A typical way of gaining the knowledge and skills outlined above is:

Level I: Equivalent to completion of high school and two years of experience in related operations, maintenance, construction and repair work. Level II and Level III appointments are dependent upon proficiency as described in the Class Characteristics section of this description.

This class description lists the major duties and requirement of the job and is not all-inclusive. The incumbent may be expected to perform job-related duties other than those contained in this document and may be required to have specific job-related knowledge and skills.