

City of San José
CLASS SPECIFICATION

Title: Automation Engineer I/II/III (1361/1363/1364)

DEPARTMENT	ACCOUNTABLE TO	FLSA STATUS
Environmental Services Department	Automation Engineer Supervisor	Non-exempt

CLASS SUMMARY

Performs programming and related work in the design, installation, configuration, operation and maintenance of the San José-Santa Clara Regional Wastewater Facility's Distributed Control System, its industrial control network and its data historian systems. Performs related work as required.

DISTINGUISHING CHARACTERISTICS

This is a three level flexibly-staffed class in the Automation Engineer series. It differs from the next higher class of Senior Automation Engineer in that incumbents of the latter have lead responsibility and initiate or develop new systems.

QUALIFICATIONS

Minimum Qualifications

Automation Engineer I

Education and Experience

Associates degree (or equivalent to 60 semester units or 90 quarter units) from an accredited college or university with a concentration in instrumentation, industrial engineering, information technology, mechanical engineering, chemical engineering or related field and one (1) year experience in configuration and programming of a DCS, SCADA, or PLC system.

Acceptable Substitution

None.

Required Licensing (such as driver's license, certifications, etc.)

Possession of a valid driver's license authorizing operation of a motor vehicle in California.

Automation Engineer II

Education and Experience

Associates degree (or equivalent to 60 semester units or 90 quarter units) from an accredited college or university with a concentration in instrumentation, industrial engineering, information technology, mechanical engineering, chemical engineering or related field and two (2) years of increasingly responsible experience in configuration and programming of a DCS, SCADA, or PLC system, including one (1) year experience at an industrial facility similar to the Regional Wastewater Facility.

Acceptable Substitution

None.

Required Licensing (such as driver's license, certifications, etc.)

Possession of a valid driver's license authorizing operation of a motor vehicle in California.

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Automation Engineer III

Education and Experience

Associates degree (or equivalent to 60 semester units or 90 quarter units) from an accredited college or university with a concentration in instrumentation, industrial engineering, information technology, mechanical engineering, chemical engineering or related field and three (3) years of increasingly responsible experience in configuration and programming of a DCS, SCADA, or PLC system, including two (2) years' experience at an industrial facility similar to the Regional Wastewater Facility.

Acceptable Substitution

None.

Required Licensing (such as driver's license, certifications, etc.)

Possession of a valid driver's license authorizing operation of a motor vehicle in California.

Other Qualifications

(Incumbents may be required to have different combinations of the listed qualifications, or more specific job-related qualifications depending on the position.)

Basic Competencies

(Needed at entry into the job in order to perform the essential duties.)

- Job Expertise – Demonstrates knowledge of and experience with applicable professional/technical principles and practices, Citywide and departmental procedures/policies and federal and state rules and regulations.
Knowledge of:
 - Process control strategies as used in a wastewater treatment facility (or similar industrial facility such as oil refineries, water treatment, pulp and paper, or chemical plant).
 - Computer or function blocks programming.
 - Signal configuration/programming.
 - PID loop tuning.
 - P&ID drawings.
 - Fundamentals of process engineering and control.
 - Design and implementation (channel allocation and loop testing) of instrument panels.
 - Maintaining and modifying real-time control algorithms.
 - Contemporary principles and practices of system design, programming, start-up and troubleshooting and documentation.Ability to:
 - Write computer programs of average difficulty in at least one language.
 - Configure, support and troubleshoot PC-based system installations.
 - Develop testing procedures.
- Communication Skills –Effectively conveys information and expresses thoughts and facts clearly, orally and in writing; demonstrates effective use of listening skills; displays openness to other people's ideas and thoughts.

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- Flexibility - makes effective decisions and achieves desired results in the midst of major changes in responsibilities, work processes, timeframes, performance expectations, organizational culture, or work environment.
- Problem Solving - approaches a situation or problem by defining the problem or issue; determines the significance of problem(s); collects information; uses logic and intuition to arrive at decisions or solutions to problems that achieve the desired outcome.
- Reliability - completes quality work assignments in a timely and efficient manner; fulfills responsibilities and maintains confidentiality as appropriate.
- Teamwork and Interpersonal Skills - develops effective relationships with co-workers and supervisors by helping others accomplish tasks and using collaboration and conflict resolution skills.
- Technology Use / Management - uses efficient and cost-effective approaches to integrate technology into the workplace and improve program effectiveness.

Additional Competencies and/or Desirable Qualifications

(Competencies, knowledge, skills and abilities that are more position specific and/or likely to contribute to more successful job performance.)

Knowledge of:

- Control system software and hardware including computer programs, networks, historian, and HMI development.

Experience with:

- DCS or similar control system architecture.
- Reading and reviewing loop and logic drawings.
- Control system network configurations, communication methods/protocols such as Profibus/Modbus (including wireless communications) and security configurations
- IT Networks configuration, architecture and security.

DUTY NO.	<u>TYPICAL CLASS ESSENTIAL DUTIES:</u> (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FREQUENCY*
1.	Operates or follows direction in all phases of configuration, operation and maintenance of the plant process control system.	Daily
2.	Installs, configures and supports client machines and related software.	Weekly
3.	Keeps all equipment and documentation properly tagged and labeled	Intermittent
4.	Keeps all DCS related cabinets, wiring and other equipment properly organized and orderly.	Weekly
5.	Develops, modifies, and debugs programs to meet system requirements interfacing to SQL and Oracle databases and other software packages.	Intermittent

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DUTY NO.	TYPICAL CLASS ESSENTIAL DUTIES: (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FREQUENCY*
6.	Identifies system problems by employing hardware and software diagnostic programs.	Weekly
7.	Communicates with a wide range of staff at the plant as well as contractors.	Daily
8.	Verifies nature of system malfunctions and either rectifies them or provides information required to effect repairs.	Weekly
9.	Maintains system documentation and backups.	Daily
10.	Performs other duties of a similar nature or level such as project support & coordination as assigned by IPCS Supervisor	Intermittent
11.	Helps team members with network troubleshooting and installing equipment.	Weekly
12.	Acquires skills and knowledge of process control applications through on-the-job and training classes.	Daily
13.	May occasionally work outside of the conventionally scheduled work hours on projects.	As Required
14.	Performs other related work as required.	As Required

*Frequency defined as Daily/Several Times, Daily, Weekly, Intermittent, or As Required

PHYSICAL/ENVIRONMENTAL ELEMENTS

The following is a general statement for the classification. Individual positions may have additional or different physical/environmental elements.

Possess ability to:

- Lift, carry, push, and pull materials and objects up to 25 pounds, or heavier weights, in all cases with the use of proper equipment;
- Move between/within work areas, including but not limited to sitting, walking, and standing on various surfaces, turning, bending, grasping, and making repetitive hand movements;
- Be exposed to moderate noise levels and controlled temperature conditions.

CLASSIFICATION HISTORY Created 5/82, Rev. 7/2/87, Rev. & Ret. 11/88, Rev. 10/89, 6/91, Rev. & Ret. 3/97(Formerly Systems Control Specialist), Rev. 10/97, Rev. 3/15, Rev. & Ret. 03/22 (Formerly Industrial Process Control Specialist); s004.doc