

City of San José
CLASS SPECIFICATION

TITLE: Industrial Process Control Specialist I/II/III (1361/1363/1364)

DEPARTMENT	ACCOUNTABLE TO	FLSA STATUS
Environmental Services Department	Industrial Process Control 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 distributed control, network and data historian systems used for control and/or study of municipal wastewater processes. Performs related work as required.

DISTINGUISHING CHARACTERISTICS

This is a three level flexibly-staffed class that is the entry/journey level in the Industrial Process Control series. It differs from the next higher class of Industrial Process Control Senior Specialist in that incumbents of the latter have lead responsibility and initiate or develop new systems.

QUALIFICATIONS

(These qualifications are typically required. An equivalent combination of education and experience sufficient to satisfactorily perform the duties of the job may be substituted.)

Minimum Qualifications

Industrial Process Control Specialist I

Education: Associates degree from an accredited college or university in instrumentation, electronics, information technology, or closely related field.

Experience: One (1) year experience in the field of networking, computer programming or control systems, instrumentation, electrical, VFD, or plant operations.

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

Industrial Process Control Specialist II

Education: Associates degree from an accredited college or university in instrumentation, electronics, information technology, or closely related field.

Experience: Two (2) years of increasingly responsible computer programming, networking, and software/hardware technical support, design and implementation of instrument panels, control logic development and documentation experience in process control at an industrial facility similar to the Regional Wastewater Facility.

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

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Industrial Process Control Specialist III

Education: Associates degree from an accredited college or university in instrumentation, electronics, information technology, or closely related field.

Experience: One (1) year industrial process control experience at the Regional Wastewater Facility.

Required Licensing:

- Possession of a valid driver's license authorizing operation of a motor vehicle in California.
- Possession of International Society for Automation (ISA) Certified Control Systems Technician (CCST) or ISA Certified Automation Profession (CAP) certification. A bachelor's degree in instrumentation, electronics, information technology or closely related field may be substituted for the certification.

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**

Knowledge of:

- Control system software and hardware including computer programs, networks, Programmable logic controllers (PLC) and/or distributed control units (DCU).
- 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).
- Control system programming.
- Contemporary principles and practices of system design, programming, start-up and troubleshooting and documentation

Experience with:

- DCS architecture or a similar control system such as SCADA.
- Reading and reviewing engineering drawings (i.e. loop drawings and logic drawings).
- Control system network configurations, communication methods/protocols such as profibus/modbus (including wireless communications) and security configurations
- Computer programs and networks and network security

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** - communicates and listens effectively and responds in an timely, effective, positive and respectful manner; written reports and correspondence are accurate, complete, current; well-organized, legible, concise, neat, and in proper grammatical form.
 - **Partnering/Networking** - develops networks and builds alliances; participates in cross-functional activities to achieve organizational objectives.
 - **Flexibility** - makes effective decisions and achieves desired results in the midst of major changes in responsibilities, work processes, timeframes, performance expectations, organizational culture,

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or work environment. Ability to work stand-by and occasionally work outside of the conventionally scheduled work hours on projects.

- **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.
- **Team Work & Interpersonal Skills** - demonstrates a positive attitude and flexibility along with the ability to develop 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

Desirable Qualifications

(Knowledge, skills and abilities; licenses, certificates, education, experience that is more position specific and/or likely to contribute to more successful job performance.)

Possession of or completion of any certification from International Society of Automation (ISA) or other Control Systems training certification equivalent to systems used at the Regional Wastewater Facility.

Knowledge of:

- C, C++, or C#
- Network based authentication directory services such as Microsoft Active Directory is a plus.
- Process control system concepts, PID loops and tuning, P&ID drawings
- Trouble shooting computer systems or electronic circuits
- Fundamentals of process engineering and control
- Control system support for wastewater treatment processes.

Experience in:

- Maintaining and modifying control algorithms required to provide efficient real time control of existing or new wastewater processes.

Ability to:

- Develop as built drawings of the existing DCS networks, components and loops.
- Assist in developing training programs designed for presentation to plant personnel.
- Conceptualize projects and ramifications at a high level and follow through with execution at a detailed level.
- Develop testing procedures and process control engineering computer simulation models.

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:	FRE-QUENCY*
1.	Operates or follows direction in all phases of configuration, operation and maintenance of the plant process control system.	Continuous
2.	Installs, configures and supports client machines and related software.	Frequent
3.	Keeps all equipment and documentation properly tagged and labeled	Occasional

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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:	FRE-QUENCY*
4.	Keeps all DCS related cabinets, wiring and other equipment properly organized and orderly.	Frequent
5.	Develops, modifies, and debugs programs to meet system requirements interfacing to SQL and Oracle databases and other software packages.	Occasional
6.	Identifies system problems by employing hardware and software diagnostic programs.	Frequent
7.	Communicates with a wide range of staff at the plant as well as contractors.	Continuous
8.	Verifies nature of system malfunctions and either rectifies them or provides information required to effect repairs.	Frequent
9.	Maintains system documentation and backups.	Continuous
10.	Performs other duties of a similar nature or level such as project support & coordination as assigned by DCSI Supervisor	Occasional
11.	Helps team members with network troubleshooting and installing equipment.	Frequent
12.	Acquires skills and knowledge of process control applications through on-the-job and training classes.	Continuous
13.	May be on call and occasionally work outside of the conventionally scheduled work hours on projects.	As Required
13.	Performs other duties of a similar nature or level.	As Required

*Frequency defined as %, (totaling 100%) *or* “Continuous” (daily or approximately 20%+), “Frequent”(weekly or approximately 15%+), “Occasional”(monthly or approximately 10%+), “As Required”(Intermittent or 5% or less)

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, 3/15; s003.doc
