

**City of San José**  
**CLASS SPECIFICATION**

**Title: Senior Automation Engineer I/II (1367/1368)**

<b>DEPARTMENT</b>	<b>ACCOUNTABLE TO</b>	<b>FLSA STATUS</b>
Environmental Services Department	Automation Engineer Supervisor	Non-exempt

**CLASS SUMMARY**

Performs assessment, design and control system related programming in the advanced design, installation, configuration, operation and maintenance of the San José-Santa Clara Regional Wastewater Facility distributed control system (DCS). Performs related work as required.

**DISTINGUISHING CHARACTERISTICS**

This is a two level flexibly-staffed class in the Automation Engineer series. Incumbents of this class are involved in the most difficult and complex assignments relating to the development, implementation, and maintenance, of municipal wastewater control and data support systems and may act as leads and provide training. Senior Automation Engineer I/II is distinguished from the lower class of Automation Engineer I/II/III in that the incumbents of the latter class have a more narrow scope of responsibility and do not normally initiate or develop new systems.

**QUALIFICATIONS**

**Minimum Qualifications**

**Senior 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 three (3) years industrial process control experience including two (2) years' experience as an Automation Engineer at 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.
- Possession of International Society for Automation (ISA) Certified Control Systems Technician (CCST) or Certified Automation Profession (CAP) certification. A bachelor's degree in Instrumentation, Industrial Engineering, Information Technology, Mechanical Engineer, Chemical Engineering or related field may be substituted for the certification.

**Senior 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 one (1) year experience as a Senior Automation Engineer I at the Regional Wastewater Facility.

**Acceptable Substitution**

None.

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

- 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 Certified Automation Profession (CAP) certification. A bachelor's degree in Instrumentation, Industrial Engineering, Information Technology, Mechanical Engineering, Chemical Engineering, or 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 - 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 and experience with:
  - Control system concepts of Distributed Control Systems (DCS) and configuration of such systems.
  - Following logical procedures in problem solving; interpreting schematics; communicating effectively orally and in writing.
  - Use of algebraic techniques in understanding and writing equations that represent real world relationships.
  - Writing computer programs of average difficulty in Function Blocks programming language.
  - Providing control system support for wastewater treatment processes.
  - Maintaining and modifying control algorithms required to provide efficient real time control of existing or new wastewater processes.
  - Process control system concepts, PID loop tuning, P&ID drawings.
  - DCS architecture and its networks' topology.
  - Reading and reviewing engineering drawings (i.e. loop drawings and logic drawings).
  - Computer networking hardware and software.
  - Windows server software and configuration of advanced server hardware.
  - Network based authentication directory services such as Microsoft Active Directory.
 Ability to:
  - Configure, support and troubleshoot PC-based system installations
  - Develop as built drawings of the existing DCS networks, components and loops.
- Communication Skills -Effectively conveys information and expresses thoughts and facts clearly, orally and in writing; demonstrates effective use of listening skills and displays openness to other people's ideas and thoughts.
- Teamwork and Interpersonal Skills - develops effective relationships with co-workers and supervisors by helping others accomplish tasks and using collaboration and conflict resolution skills.
- Building Trust - communicates an understanding of the other person's interests, needs and

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concerns; identifies and communicates shared interests and goals; identifies and communicates differences as appropriate; demonstrates honesty, keeps commitments and behaves in a consistent manner.

- Creativity - Addresses objectives and problems while questioning traditional assumptions/solutions in order to generate creative ideas and new ways of doing business; exhibits creativity and innovation when contributing to organizational and individual objectives; seeks out opportunities to improve, streamline, reinvent work processes.
- 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.
- 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.)**

DUTY NO.	<b><u>TYPICAL CLASS ESSENTIAL DUTIES:</u></b> (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.	Acts as a lead, assigning, scheduling and checking work, providing technical direction, determining priorities, enforcing safety procedures, and training staff. As a lead, may sign timecards and may give input to the supervisor regarding the employee's performance evaluation, hiring, promotion, termination and discipline of employees.	As Required
2.	Assess, modify, and prepare documentation & drawings related to the DCS.	Weekly
3.	Trains fellow team members on the control system's components, configuration, administration, and network and data historian systems used for control and/or reporting of municipal wastewater processes.	Weekly
4.	Coordinates with capital improvement project (CIP) teams, operations and maintenance to coordinate projects, startups and shutdown of plant processes.	Weekly
5.	Develops and maintains as built drawings of the DCS and related control loops, P&IDs and networks.	Weekly
6.	Develops detailed project documentation related CIP projects as well as ongoing upgrade or other DCS related projects.	Daily
7.	Develops training materials for operations staff as well as fellow team members.	Weekly

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8.	Facilitates information exchange between operations staff and CIP/contractors related to Plant control strategies and DCS.	Weekly
9.	Maintains a DCS disaster recovery plan, helps supervisor and team members develop a comprehensive system recovery and communication plan in case of emergencies.	Daily
10.	Works closely with operations and other Plant staff to develop or change effective human machine interface (HMI) and control board layouts.	Daily
11.	Helps Plant CMMS team in the development of reliability strategies for the critical Plant processes/electrical equipment using Reliability Centered Maintenance (RCM) and standards for preventative/predictive maintenance.	As Required
12.	Develops and performs procedures along with fellow team members, to test and ensure control system reliability and efficient operation.	Weekly
13.	Develops safety procedures related to the control system components, high voltage inputs/outputs and instrumentation components.	Weekly
14.	Develops root cause failure analysis (RCFA) on equipment failures and helps team members recommend corrective actions on controls and instrumentation equipment.	Daily
15.	Oversees DCS-related field construction and verification of proper installation, performing loop checks and oversight of final commissioning of DCS/PLC equipment associated with CIP or other projects.	As Required
16.	Responds to emergencies at night, on weekends, and on holidays; drives to various worksites to test and repair equipment; exposure to dirty and disagreeable work conditions which may require physical effort in climbing ladders, working on elevated surfaces; confined space entry, including tight crawl spaces; and/or exposure to raw sewage, high voltage and chemicals.	As Required
17.	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 3/97; Rev & Ret 3/15 (formerly Senior Process & Systems Specialist), Rev. & Ret 03/22 (formerly Industrial Process Control Senior Specialist); s002