baywork
bay area water/wastewater workforce reliability

MISSION-CRITICAL PROFILE

Name: Macario Cabrera
Organization: Santa Clara Valley Water District

Job Category (Check one below):

- ☐ Water Treatment
- ☐ Water Distribution
- ☐ Wastewater Treatment
- ☐ Wastewater Distribution
- ☒ Electronic Maintenance Technician/ Instrument Technician
- ☐ Electrician/Electrical Line Worker
- ☐ Machinist/Mechanic
- ☐ Other

1. Please describe the work you do.

   Within the district, I work on a wide variety of technical tasks involving design, fabrication, systems integration, installation, operation and maintenance of process instrumentation, computer and microprocessor-based control systems, telemetry, Supervisory Control and Data Acquisition Systems (SCADA) and processes used in the treatment and conveyance of water to the district's clients.

2. What combination of education, vocational training, apprenticeship, experience, and/or skill did you obtained in order to be qualified and selected for the job?

   I attended and completed combinations of technology and engineering study programs with a focus on science, mathematics, and industrial process measurements including studies in electronics/electrics, pneumatics/hydraulics, electromechanical systems, safety, statistics and economics. I also attended specialized courses in industrial instrumentation, automation, and data communications under the ISA (International Society of Automation) training programs.

   I also spent summer sessions like the in-plant training internships in various industrial plants and test/ measurement laboratories developing analytical skills and proficiency in the application of theories and principles, understanding actual live production processes and the use of diagnostic troubleshooting methods and repair skills.

3. What do you like best in your job?

   I like my job because it gives me the opportunity to apply what I have studied and prepared for, in a career and profession of my choice. In this job are the elementary tasks of problem solving, troubleshooting, and the use of scientific and technological principles so that automated processes work as expected and to help assure

the conformance to production standards and quality. The workplaces are legally safe with opportunity to work with professionals, with active management and having decent benefits and remuneration.

4. Please tell us about the projects and activities you have enjoyed most in your work in the water/wastewater field and what made them rewarding.

   I was involved with a recent project for a valve replacement for our Rinconada Water Treatment Plant which entailed upgrading of the Remote Control Panels and instrumentations for the treatment plants. I worked in the installation of water quality water monitoring instrumentation station, which is a joint project of the Federal Homeland Security Agency to protect the water facilities from potential terrorist attack. The work is rewarding because it is intended for the common good of the district worker, the communities served by the district and the federal government.

5. What qualities and capabilities are needed in order for a person in your area of expertise to be successful in water/wastewater industry?

   To succeed and be effective in the field of instrumentation and control in the water/waste water industry a person should be interested to acquire expertise related to water and wastewater treatment processes and their corresponding automation and control requirements. Develop qualities such as alacrity which is the enthusiasm to perform the difficult task with readiness and joy. Enhance capabilities by constant upgrading and tracking down technological developments, and honing interpersonal skills and knowledge related to instrumentation and control in the water and wastewater industry by attending continuing education course, seminars, technical exhibitions and certification programs.

6. Do you have any advice for the individual who will be considering pursuing a career in your field in the water/wastewater industry?

   Choose the proper curriculum of studies that will help you prepare technologically to understand, choose, and use the new generation of instrumentation and controls. The fast pace of electronics and semiconductor technologies will generate new models of controls and instrumentation utilizing microelectronics and embedded systems. This technological trend is happening right in our midst, in Silicon Valley and the Bay Area. The future results of this concerted effort of both by the vendors of instruments and users of instruments to apply modern and state-of-the-art control and measurement equipment will address the efficiency of technical manpower as well as the effective and efficient management of our installed-based assets, energy, and capital investments.