baywork
bay area water/wastewater workforce development

MISSION-CRITICAL PROFILE

Name: Francisco Espinoza

Organization: City of San Jose – Environmental Services Department, San Jose/Santa Clara Water Pollution Control Plant

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:

   I maintain and troubleshoot the instruments and meters that are part of the plant's automated wastewater treatment system, which we call the Distributed Control System (DCS). This automated system monitors and controls the plant's wastewater treatment processes using a computer network. In the field, I calibrate and program the instruments that feed data to the DCS. I also program human interface graphics to make it easier to read the system processes that help us make operational decisions.

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

   For education, I went to a trade school called Perry Tech, which specializes in Instrumentation training. Their Instrumentation Training Program is one of the top-notch programs in the nation. Some of the lessons that I learned from Perry include learning about differential transmitters, MAG flow meters, and automation and processing technology. In addition to learning in a classroom setting, there is a two-year apprenticeship that provides hands on training in preparation for the Electrical and Instrumentation Certification. All my experiences in field work were hands on. Attending a trade school taught me to use all the necessary tools to prepare myself for my career.

3. What do you like best about your job?

   The job can be described as "being paid to learn." New technology is always involved in the field and I enjoy learning from it and using my knowledge to fix problems with instrumentation. Tinkering with the new technology also creates new ways for me to improve wastewater processes. Instead of working on one task there are always diverse responsibilities such as, programming on the desk then moving on to check out the gauges in the field. Since there is always new technology involved, there is always a new challenge to incorporate with the old processes. Finally, another aspect of my work that I enjoy is fixing an engineer's mistake.

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,

   One of the activities I enjoy the most is taking on projects that are helpful in plant processes. Being involved in projects means that I can research alternative ways to improve the technology. In one project, I upgraded the human machine interface (HMI) with the engine generator to input settings, provided new software and participated in testing. Once completed, the process became more efficient and I understood more about HMI.

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

   An individual should learn to be good at math, science, and have a willingness to learn new things. One should have the ability to do more than a calibration check because one must keep up with the evolving technology. Qualities such as adaptability, focus, patience, and providing customer service are important in the industry as well. Having customer service is important because the operators are the customers and one should reassure them that you are handling the job.

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

   Try to gain knowledge of the field by talking to people who work in the industry. Also, invest some time in researching the pros and cons in the field and decide if you will like this as a career.