

East Bay Municipal Utility District

375 11th Street

Oakland, California

I. Respondent:

Alex Borys, Sr. Civil Engineer-Commissioning Services Group

II. Presenters:

- Dave Bailey, Sr. Mechanical Engineer
- Cindy Wu, Associate Mechanical Engineer
- Besnik Miftari, Assistant Electrical Engineer
- Sonya Spala, Assistant Mechanical Engineer

III. Treatment Plant Characteristics:

- Upper San Leandro Water Treatment Plant (WTP), Orinda WTP
- Water Treatment Plant and various Distribution Plumbing Plants
- 2,000 employees (district-wide)
- 1.4 million customers served

IV. Innovation:

A. Description

- Vertical Turbine Pumps for water treatment plants and pumping plants
- Double Diaphragm Chemical Metering Pumps and pump system to feed Hydrogen Peroxide to treated water
- General commissioning approach for construction projects

B. Type of Innovations

- Commissioning
- New approach to documentation, technical training, staff development, and knowledge management

C. Motivation for Innovations

- Provide technical expertise and leadership for all commissioning related work to improve overall safety, quality and reliability upon handover to the client (O&M staff)
- Enhance overall coordination and communication between Design Engineers, O&M staff and Construction engineers
- Promote continuous design improvements by sharing lessons learned

D. Barriers/Challenges

- Build new Commissioning group structure and procedures from scratch
- Missing or incomplete inspection of electrical and mechanical components delays commissioning
- Pump vendors come unprepared, or are not able to commission complete pump system

E. Benefits

By implementing a structured commissioning program for each distribution system, or water treatment plant upgrade project, the District has reduced project delays and improved the quality and functionality of new pump systems.

F. Lessons Learned

- Commissioning team is educating construction team and Contractor on sequencing of commissioning tasks
- Train construction inspectors about inspecting electrical and controls equipment
- It does not work to let general contractors drive commissioning since they are often not qualified. Better to present contractors with test procedures and forms to follow. Incorporate commissioning plans and commissioning sequencing flow charts into Design contract documents
- For large projects (e.g. treatment plant upgrades), conduct short informal, early morning coordination meetings with Contractor foreman, resident engineer, construction inspector, and relevant O&M staff to coordinate daily construction and commissioning work