

Establishing a Successful Commissioning Program

Birdsell, Richard^{1*} and Puccio, Mike¹

¹Orange County Sanitation District (OCSD), Orange County, California, USA
(*correspondence: rbirdsell@ocsd.com)

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ABSTRACT

The goals of any water/wastewater utility engineering department are to deliver projects that are on schedule, on budget, do the function intended and that can be operated and maintained. Keeping projects on budget and schedule was and is a priority of the Orange County Sanitation District (California, USA). As a result, many processes were developed and an entire Project Management Office (PMO) was created. In 2002, OCSD embarked on a two billion dollar plus capital improvement program (CIP) tasking the Engineering and Construction Department with the challenge of starting up and testing many projects with parallel schedules and make them ready to be turned over to the Operations and Maintenance Department (O&M). As in any construction industry, water/wastewater has been challenged with executing one of the most critical stages of a construction project, commissioning, at the end of the project when the risk of budgets being exhausted is very high and there is significant pressure to complete the contractor's work. Another challenge is that the facility is operating during commissioning and when the contractor is done with all the specified testing, the owner starts operating and maintaining the next day. This requires careful planning and control throughout the design, construction and commissioning phases.

OCSD identified a significant risk in commissioning a two billion dollar CIP which included: New 300 MGD Headworks Facility, New 30 MGD Trickling Filter Secondary Treatment Facility, New 60 MGD Activated Sludge Secondary Treatment Facility, New 60 MGD Trickling Filter/Solids Contact Secondary Treatment Facility, New Co-Thickening and Dewatering Centrifuge Facility, New Primary Sludge Distribution Pump Station, Rehabilitation of Primary Clarifiers, Secondary Treatment Facility, Digesters and Central Generation Facility, and Replacement of six Lift Stations. With this many complicated projects in different phases of design and construction it was important to develop a detailed plan to commission that would include a cultural change with regards to commissioning in most departments of the organization

This paper will describe the details of establishing and administering a water/wastewater commissioning program. Several case study projects will be included with honest lessons learned. The audience for this paper will primarily be water/wastewater owners.

ABOUT THE SPEAKERS

Richard Birdsell, PE has been involved in design, construction and commissioning for refineries, power plants, water and waste water facilities for over 30 years. He is currently a Senior Engineer responsible for the Orange County Sanitation District (OCSD) commissioning program.

Mike Puccio, PE has over 20 years of experience in the design and commissioning of water and wastewater facilities. He currently is the Engineering Supervisor for Orange County Sanitation District (OCSD) overseeing in-house and consultant designed projects including commissioning.