

SCADA Upgrades to Otay Water Treatment Plant

Noune Garounts^{1*}

¹MWH Global Inc., 618 Michillinda Ave, Suite 200 Arcadia, California, USA, 91007

(*correspondence: noune.garounts@mwhglobal.com)

FORMAT: 30 minute PowerPoint presentation

KEYWORDS

Plant Upgrade, SCADA, Integration, Automation, Lessons Learned

ABSTRACT

This presentation will provide information on the technology that was used to upgrade the existing SCADA system at the water treatment plant location in San Diego, California. The Otay water treatment plant (WTP) filters were originally built in 1979 and the plant was last upgraded and expanded in 1986. The current process improvements were designed and implemented during the Otay WTP Upgrades Phase 1 and Phase 2 project.

The Otay WTP Upgrades Phase 1 and Phase 2 project included the construction of a new chlorine dioxide feed system and contactor, Powdered Activated Carbon (PAC) feed facility, a new third flocculation and sedimentation basin, filter upgrade improvements (pumped backwash, filter-to-waste, new media and underdrains), additional chemical feed systems, and major SCADA system upgrades.

The PCS Architecture Diagram was developed to support all the existing and planned plant expansion systems. The architecture focused on new PLC and remote I/O panels, a Fiber Optic communication system backbone, and other communication equipment upgrades. The block diagram included the existing plant PLC system network with the new upgrades. A redundant PLC was installed, replacing relays for backwash control for the new filter operations and existing plant facilities. In addition, new package system PLCs were also installed for the PAC and chlorine dioxide generator feed systems. Signals to the existing antiquated plant Main Control Board were integrated into the new PLC system and incorporated into the new plant SCADA system. The old Main Control Board and strip charts were replaced with new Operator Workstations. The water treatment plant remained in continuous operation throughout construction, except for short, allowable shutdowns scheduled in advance.

About the Author:



Dr. Noune Garounts is the Instrumentation and Control Engineer for MWH Global Company. Ms. Garounts has more than thirteen years of electrical engineering experience working in Generating stations and electrical substation from 500kV to 4kV, electrical power transmission & distribution, substation & industrial automation projects. She has completed several water/wastewater projects that include design, engineering, and contraction support.