



A Rockwell Automation Company

Santa Margarita Water District SCADA Upgrade - Phase II

The Client:

The SMWD operates three wastewater treatment plants (9MGD, 3MGD and 80KGD) that had been upgraded to produce reclaimed water for non-potable reuse. The existing group of 72 pump and reservoir sites continues to grow and require ongoing upgrades and improvement. Reclaimed water is pumped back for domestic and public irrigation. Potable water arrives

along the South County Pipeline and is stored locally in reservoirs. Each pump station and reservoir has independent local control provided by Remote Terminal Units (RTU). Connection with the main district SCADA is facilitated via a network of radio modems.

The Requirement:

After completing Phase 1 of the SCADA conversion (covering all distribution operations), the task was then to upgrade the entire District's SCADA systems into fully centralized and completely redundant applications. Fast and secure network communication between control rooms of each treatment plant and main district control room enabled feasibility of this

design approach. The main goal of this project was for the migration of all treatment plants into the existing SCADA system.

The Design Solution:

Following the Phase I implementation of Wonderware Application Server 2.1, Hinz integrated AppServer 3.0 and InTouch 10.0 into the HMI Galaxy database to create a single data source for the SCADA configuration files. Wonderware redundancy was implemented with the Internet Information Server, Data Historian and Galaxy repository server for three control rooms while 85 master application object templates were created to model the unique devices. Master template ArchestrA symbols, predefined naming conventions and scripting were used to streamline embedded application objects.

Specialized custom objects were created to monitor reclaimed water compliance with California's Code of Regulations Title 22, Sections 60301 through 60355. Screen navigation used process plant overview diagrams including aerial photographic and built-in quick links with triple access toolbars. Custom trends were embedded into the HMI application using ActiveFactory built-in configuration files. Alarm screens and banners provide historical information of

fault states for the field devices and SCADA components.

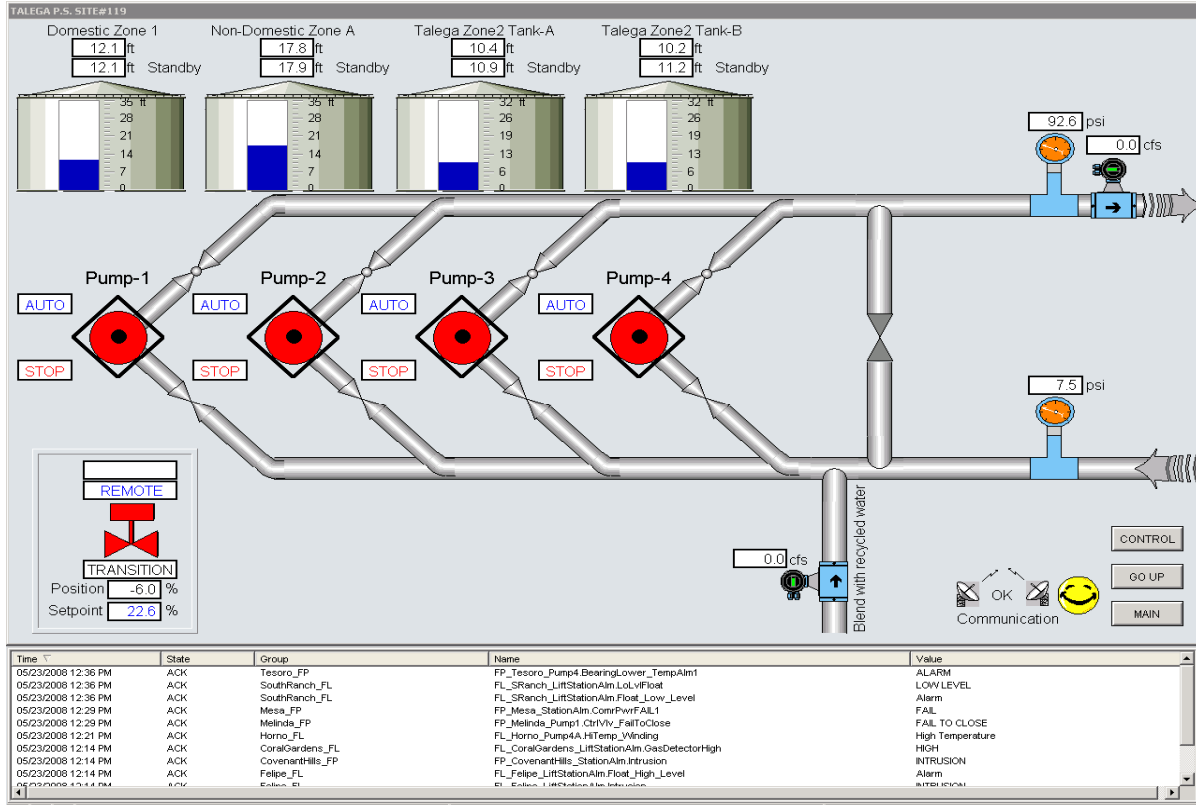
Global Galaxy and SCADAAlarm with Message Exchange-MX is used for acknowledging alarms by phone and pagers using bidirectional communication between both applications. Full SCADAAlarm redundancy is secured by "hot standby" running on the backup application server.

Remote visibility is based on PropalmsTSE terminal server using InTouch for secure access over the public Internet. Total system security is based on Galaxy Security Mode where each user has security levels with unique functionality rights. During weekend and holiday operation, operators with authorized security credentials can seamlessly view multiple plant HMIs for fast and mutual control of all wastewater sites, thus reducing cost of operations and increasing system control.



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System Specifications:

- **Alarm Tags** – 1700; Historical tags – 1250; Total HMI screens – 120; Total stations modeled – 72; Platforms – 4, Engines – 5, Application Object Instances – 900
- **Communication protocols used:** SuiteLink (within Galaxy), DH+ (Galaxy-PLC), DDE (Galaxy-Win911).
- **PLCs-** AllenBradley SLC 505, Remote terminal units – 72
- **Total hardware I/O points** – 4200
- **Remote alarm annunciation and acknowledgement** – phone and pager with Win911
- **Software license counts:** Application Server Design-1; Application Server 25000 I/O – 1, InTouch – 2 (incl. one for Terminal Server), I/O Servers – 1, Active Factory – 3, Historian – 5000 tags
- **Galaxy Repository and Domain Controller** – Server Class Machine; Historian – Server Class Machine, Internet Information Server – Server Class Computer, Engineering Station and Design Station – Desktop Class Computers
- **Terminal Server** – PropalmsTSE with 4 concurrent licenses

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com