Crawford Technical Services:
TIA Portal Application Awards – 2012

Company Name: Crawford Technical Services

Location of Application: 30 Baum Street
Hershey, PA 17033

Website: *www.crawford-tech.com*

Key Business Activities: Crawford Technical Services develops water management systems for the extraction, storage, pipeline flow, truck/GPS monitoring, use, and treatment of water in the life cycle of hydraulic fracturing for shale gas plays.

Name of Application: HydroWatch™ Enterprise Level SCADA System - water withdrawal, management and distribution systems. HydroWatch™ is a hardware/software solution that includes the mechanical infrastructure including pumps, flowmeters, sensors along with all automation control equipment, and the HydroWatch™ SCADA interface.

Description of Application: HydroWatch™ enables for the automated process in water management from extraction control, impoundment monitoring, real time water truck GPS tracking, frost control, report generation, security camera integration, optical character recognition of license plates, and many more features through a single interface available by Internet Explorer, operating HydroWatch™, and powered by TIA Portal with Siemens Industry infrastructure. Be assured, there is no second best in this market, our solution makes all other solutions a distant 10th place.

What challenges led you to look at a new solution?
Marcellus shale is one of the newest shale plays in the United States with little to no existing infrastructure, therefore we had the opportunity to select a leading platform to build HydroWatch™ without the chains of a legacy automation system. Our biggest obstacle to overcome was the requirement to monitor and control hundreds of simultaneous processes stretched over 100,000 square miles and the need to build a support model with the quickest learning curve to be self-sufficient in the field with on a common automation platform.

Siemens TIA Portal simplified the steps to an automation unification and reduced software training and 3rd party support contracts. TIA Portal being built on Ethernet communication enables us to be positioned in the market as the fastest update solution provider when most competition communicates over Modbus RTU 232.

What Siemens automation products were chosen for this project and why?
The "HydroWatch™" system uses four to twelve Comfort Panels (TP700), a minimum of two S71200 PLCs, up to 3 G120 drives up to 500HP with a server operating WinCC, WinCC Recipes, Web Navigator. All of this is configured using the TIA Portal software. These products were chosen because of the easy Ethernet communications capabilities and the fact that all of this hardware can be networked and configured inside one software package, thus greatly reducing the engineering time required. In addition all of these products have the global support from Siemens that Crawford Technical Services demands.

What features in the TIA Portal addressed your project challenges?
The integration of the PLC and HMI inside one software environment was the real time saver. This makes the loading, maintenance and management of software much easier. The data logging capabilities of the PLCs were critical, as well as the built in Modbus communication blocks for custom requests. The ease of use of the software was essential, as it allowed for easy drag and drop of tags

between the PLC and HMI editors. Communications between the PLCs was easy with the PUT/Get commands and Recipe handling in the HMI software was also very easy to setup and use. The remote diagnostics offered was also an important feature because of the scale of the application.

How has your business improved?

Crawford Technical Services have stated that the Siemens hardware and TIA Portal software is helping them be the dominant player in their industry.

Because they are able to track the extraction of over 1.4 billion gallons (2 billion by the end of 2012) of water per month, they are able to win new business. Crawford states that the TIA Portal software has reduced their engineering time by at least 50%, with the additional statement "we are done before we even start".