SIEMENS

Spencer Technical Group:
TIA Portal Application Awards - 2012

Company Name: Spencer Technical Group

Location of Application: Las Vegas, NV

Website: www.spencertechnicalgroup.com

Key Business Activities: Control Panel Fabrication and Pyrotechnic Systems for Music Concerts

Name of Application: Pyrotechnic System for Music Concerts

Description of Application: The application controls and synchronizes the flame heads used for a pyrotechnic display at music concerts. A total of 32 PLCs are used to control multiple flame heads, firing boards and accumulators tanks that store propane gas. This pyrotechnic control system has been used at rock concerts for bands such as Guns n' Roses, Nickleback and Kiss.

What challenges led you to look at a new solution?
The main goal of this system was to improve the safety of the pyrotechnic display, which in the past had been a hardwired system. With a PLC based solution the company was able dramatically increase the safety of the system because of the improved control and reliability given to the operator. Critically a PLC based system can report faults with the flame heads and monitor gas pressure in the accumulator tanks.

What Siemens automation products were chosen for this project and why?
Spencer Technical Group had a history of working with Siemens products and for them the obvious choice was the S71200 PLC. They choose this product because of the built in Ethernet port and native Modbus TCP communication blocks, which allow the PLC to talk to other components in the system. The combination of cost, performance and feature set led Spencer to select this PLC.

What features in the TIA Portal addressed your project challenges?
The Modbus TCP blocks built into the command set was also one of the main features required. In addition, this system required 32 separate PLCs to be configured and connected together. This was easy to do inside the TIA Portal because it allows multiple PLCs in one project, and with the device and network editor, the user could easily connect them together in a graphical manner.

How has your business improved?
Implementing a PLC based solution has greatly reduced the wiring and cabling costs of the previous system. The company has also benefited with reduced engineering time because of the ease in configuring a single project containing multiple PLCs. A single software for PLC, HMI and network configuration saves time. Spencer estimates they saved up to 30% in engineering time. In addition they state that there is nothing on the market that completes against the S71200 and the TIA Portal in terms of price, functionality and ease of use.