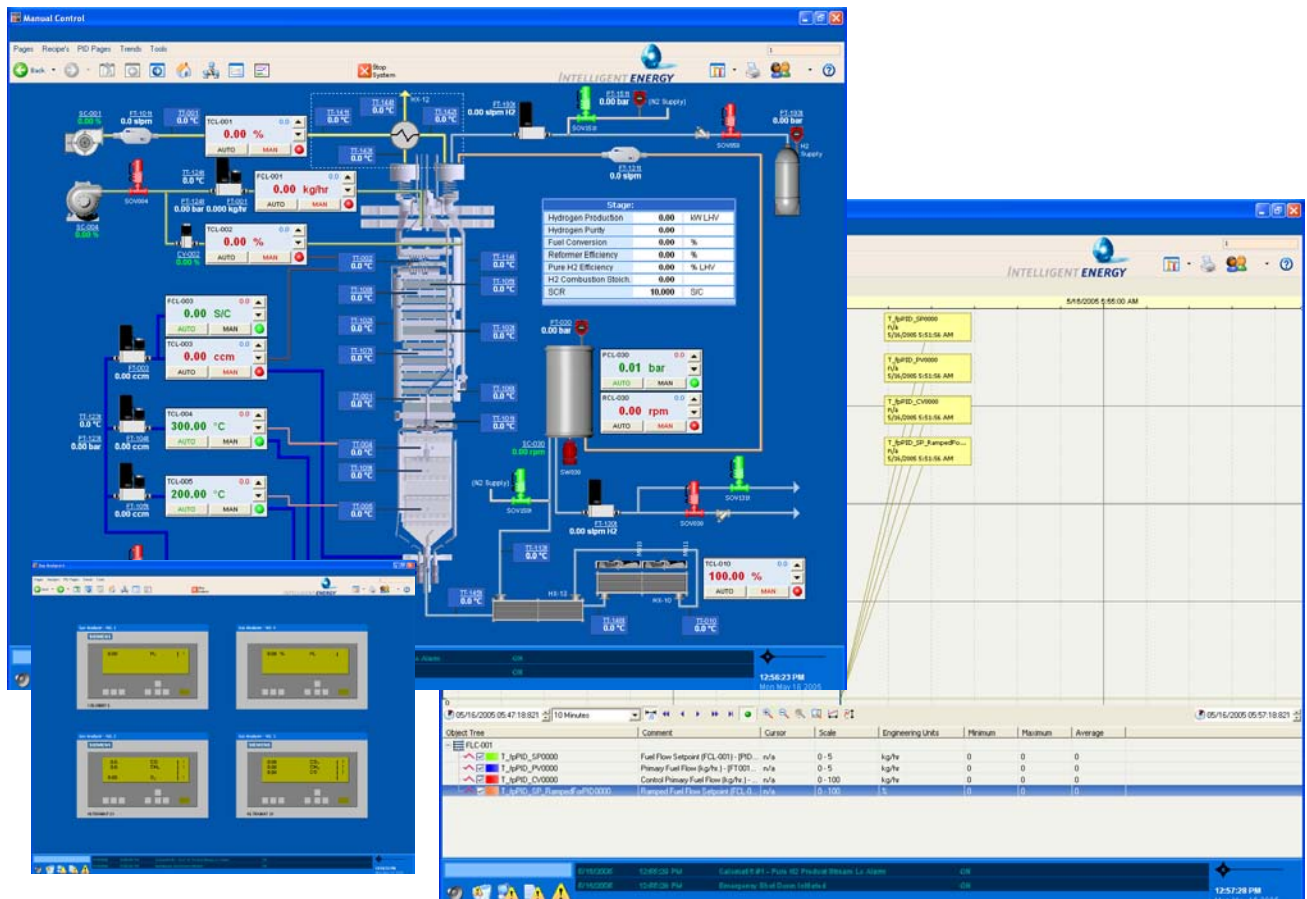


Overview

Intelligent Energy has achieved key technology leadership in hydrogen generation, fuel storage, and power generation through focused development and strategic acquisitions. Their R&D facility in Long Beach is working on improving hydrogen reforming technologies. In constructing a new hydrogen reformer at their facility, Intelligent Energy designed the hardware, developed the set of P&IDs, and electrical components list. Enterprise Automation was contracted to complete an electrical design, build the electrical panels, program the PC based control software, and create a system HMI.

Solution

Think and Do, from Phoenix Contact, was used to control this system. It was chosen for its flexibility in an R&D environment. CitectSCADA was utilized for enhanced visualization, trending capabilities (including Process Analyst), and recipe handling. As the hydrogen reformer system is an ongoing R&D tool, Enterprise Automation created a flexible manual, semi-automatic, or automatic system where many aspects of system operation could be altered. Enterprise Automation utilized the recipe system in CitectSCADA to allow Intelligent Energy to build 'stages' to start-up and operate the system. CitectSCADA's Process Analyst gave the researchers a powerful user-configurable trend client which allows for real-time and historical data analysis.



Technology

CitectSCADA communicated to Think and Do's OPC server which communicated via Ethernet to the Automation Direct I/O and Profibus to the gas analyzers. A Dell workstation computer with mirrored hard drives was used for the CitectSCADA and Think and Do software. This unit was placed in service 2st Quarter 2005. EA has continued supporting Intelligent Energy engineers since the install.