Fuel Cell Energy DFC 300s on a San Diego, CA tennis court

FuelCell Energy, Inc.
Danbury, CT

FuelCell Energy
Ultra-Clean, Efficient, Reliable Power

Fuel Cell Line and Grid Setup Screen

About FuelCell Energy

FuelCell Energy, Inc. is a world leader in the development and manufacturing of high temperature hydrogen fuel cells for ultra-clean electric power generation. The company's patented Direct FuelCell® (DFC®) technology combines high efficiency, ultra-low emissions, simplicity and economical cost for stationary power generation. Their products range in size from 250 kilowatts (kW) to 2.4 megawatts (MW), and are designed for a wide range of customers, including hospitals, universities, hotels, utilities, and wastewater treatment facilities. The company is also developing next generation high temperature fuel cell products, such as a diesel fueled marine Ship Service Fuel Cell, combined-cycle DFC/Turbine and DFC-ERG™ power plants, and next generation solid oxide fuel cells.

ICONICS Software Deployed

FuelCell Energy, Inc. uses multiple ICONICS solutions in the monitoring and control of their fuel cell products, specifically GENESIS32™ Enterprise Edition HMI/SCADA application; WebHMI™ Web-based, real-time automation software; and the AlarmWorX™32 distributed enterprise-wide alarm and events management system.
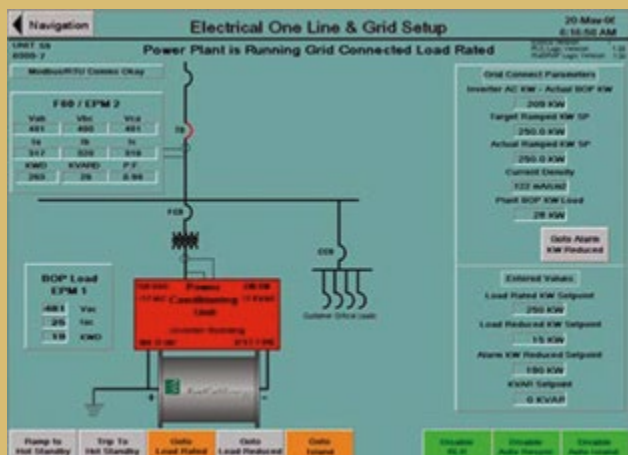
Project Summary

FuelCell Energy required a "robust, secure Human Machine Interface" to monitor and allow remote control of the company's power plants as standalone systems. They initially worked with a system integrator partner, then customized their resulting solution before finalizing project development on their own.

The current system is comprised of approximately 20 screens for rich, graphical representation of FuelCell Energy's processes (e.g., trending, alarms and historical alarms).

Benefits of the System

ICONICS' GENESIS32 system has provided FuelCell Energy with sought-after alarm management and online functionality. Operators can now be alerted during alarm/event conditions for immediate acknowledgement and action. The Web-enabled HMI fosters ease of use and remote monitoring/control throughout the company.

A further benefit is the ICONICS suite's seamless integration into FuelCell Energy's existing operating systems (Windows 2000/XP Professional), with features such as data logging into Microsoft SQL Server and MSDE. In

addition, the company's GE Fanuc 90-30 controllers are able to communicate directly to GENESIS32 via Kepware OPC servers.

The combination of ICONICS solutions (GENESIS32, WebHMI, and AlarmWorX32) delivers the easy-to-use HMI, Web-based remote access, and alarm/event management that the energy system manufacturer required for remote monitoring/control of its power plants as "standalone" systems.

Solutions Highlighted

WebHMI
Web-Based Real-Time Automation Software

AlarmWorX
Multimedia OPC Alarm Management Software

A DFC300 Installation in Downtown Manhattan

HMI in Action at a Fuel Cell Energy Inc. Manufacturing Facility

Conclusion

FuelCell Energy has been a satisfied ICONICS customer for over two years, having evaluated GENESIS32, AlarmWorX32, GraphWorX32, and TrendWorX32 as well as additional OPC and WebHMI features in real world applications. They've found that ICONICS is an easy to implement and reliable OPC Web-enabled HMI/ SCADA package to use, compared with legacy offerings. The firm plans to continue to employ ICONICS tools for its product line.

Case Study Details

In creating their HMI, FuelCell Energy had specific guidelines and requirements, including:
- Secure remote connectivity
- Robust system reliability
- Easy maintenance/troubleshooting
- A rich GUI with advanced features
- OPC-based communications
- Standard VBA scripting