CONCEPT SYSTEMS INC
conceptsystemsinc.com

HEADQUARTERS
1957 Fescue Street SE
Albany, Oregon 97322
866-791-8140

PROJECT BRIEF

We Can Take You There!™

Fuel Farm Control System

Description: The Fuel Farm Control System Upgrade was designed to replace outdated controls. This Fuel Farm consists of five storage tanks and associated equipment used for storing and transferring Jet A and specialty fuel, fueling aircraft, and loading/offloading supply trucks. The new system was designed to address various customer concerns, provide greater fuel throughput, increase efficiency through a Human-Machine Interface (HMI), improve equipment monitoring, and enhance alarming and safety systems. More efficient fuel handling was an important goal of this upgrade.

Another key improvement to the control system involved the implementation of an HMI. Risk was dramatically reduced and efficiency was greatly improved by allowing operators to see the position of valves. Such visual support was not available in the previous system.

Enhanced system monitoring and alarming also played significant roles in the success of this upgrade. For example, temperatures of pump motors are monitored for maintenance and safety reasons. Also, when the water detection sensor on a filter/separators senses a high water level, an alarm is generated on the HMI. Without prompt acknowledgement by the operator, the system closes the slug valve, thus preventing system damage.

Safety systems on the Fuel Farm were also greatly improved during this upgrade. Various control system interlocks, leak-detection equipment enhancements, and a hardwired Emergency Fuel Shut Off (EFSO) system were implemented. With software and hardware interlocks, the potential of mishandling fuel is greatly reduced. The EFSO system provides physical interlocks and prevents pump operation if any EFSO button is activated. A seismic sensor is also hardwired into the EFSO circuit; all pumps stop if a seismic event occurs.

The Fuel Farm Control System upgrade increased the usability, efficiency, and safety of the existing equipment. Better operator control, better system automation, better productivity – it all adds up to better profits for this customer!

Results:
- User friendly system comprised of standard, industry accepted, hardware and software
- A centralized control system for ease-of-use
- Capacity to handle greater fuel throughput

Technologies/Platforms Used:
- Allen-Bradley ControlLogix PLC
- Allen-Bradley MCC IntelliCenter
- DeviceNet, ControlNet and EtherNet/IP
- Rockwell FactoryTalkView SE
- Specter Instruments WIN-911 for alarm notification
- TraceTek Leak Detection System
- Intrinsically Safe Control

Services Provided:
- Control Engineering and Design
- PLC/HMI Programming
- O & M and AutoCAD Documentation
- Start-up & Commissioning