Ecava IGX Validates for Fairview Gas Metering System

How It Started

In the oil and gas industry, it is not news that flow metering validation systems are essential in order to reach the revenue billing stage. The Fairview project in Brisbane, Australia was initiated in year 2014 by https://www.santos.com/ to comprise of gas metering skid (which was formed by flow meters, valves, transmitters, Gas Chromatograph (GC), Moisture Analyzer, etc.), flow computers, and SCADA supervisory system. The project integration is handled by Krohne Oil & Gas (KOG), in which they have approached Ecava to furnish the SCADA supervisory system by using Ecava IGX. The metering skid instruments will send the observation data from field to flow computers and Ecava IGX SCADA. These field data shall be flow rates, temperature and pressure measurements, valves status, and GC composition data.

Ecava IGX Can Do All the Magic in a Flick

The magical moment of this project is, the metering skid may seem so huge, but yet the configuration required in Ecava IGX is so simple and minor, that one could hardly believe it actually supported the entire system. Ecava IGX is required to integrate and communicate with flow computers supplied by ABB Group via Modbus TCP/IP protocol. The integration involves the observation for flow rates, totalization, transmitter values, valves status, gas composition values, flow meter diagnostics, etc. All these data will be used in mimic design for the overview screen, in which operators can monitor the metering system in a glance.

Fairview gas metering skid in post assembly stage

The analyzer shelter for Fairview gas metering system (which consists of Gas Chromatograph, Moisture Analyzer, Flow Computer, etc.)

Flow rate totalization will be designed in separate page of SCADA mimic also, these totalizer values will be polled from flow computers which performed the calculation. Gas Totals screen is designed to shows totalizers of Run 1 and Run 2 for previous day, current day and eternal. Each of the 3 sets (6 sets in both run) has totalization for forward and reverse flow, while maintenance flow is only available for eternal totalizer.

Other than that, there are different challenges such as sampling operation and metering validation.

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+603-8080 4838
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Operators are required to login to the authorized role level in order to proceed for the metering validation operation. In order to perform validation, several interlocks are implemented based on project requirements, such as valves alignment and active alarm clearance. During validation, error percentage will be calculated between duty and master meter, which will be generated into report later.

Similarly with other SCADA projects, data will be logged into databases and presented as graphical trends as well as scheduled reports. There is a special requests to customize the reports into particular templates in order to meet the customer's standard, as well as automated generation of PDF reports in the server hard disk.

SCADA Mimics Screenshot

Fairview Gas metering system overview mimic

The Hardware / Software:

Server Machine: Pepperl+Fuchs VisuNet XT PC9715
OS: Windows 7 Ultimate

Device: ABB Flow Computer
Protocol: Modbus TCP/IP

SCADA: Ecava IGX
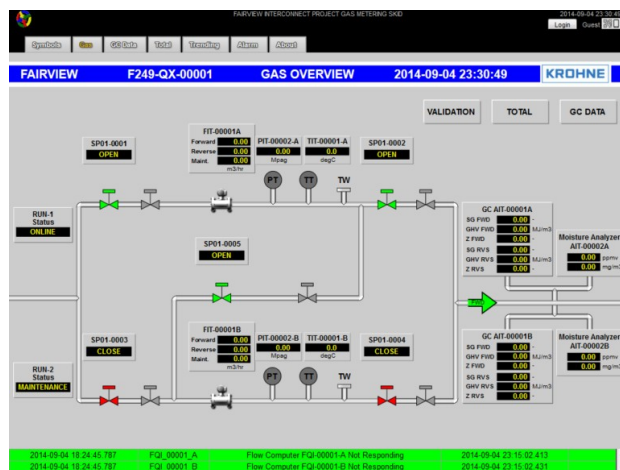IO tags: Supported for unlimited (300 in-used)

Database: Microsoft SQL Server Database

Download Ecava IGX

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