

Case study

Tri-State Generation and Transmission Association saves money, time, and improves reliability with Nexus Controls' OnCore Control System

"I didn't want to be on the 'if it fails we're down for 6 months' side of it. ... This is something that we're looking at as a 10 to 15 year solution. ... It's pretty intuitive, it's user friendly, we have hot swapped some modules (on the fly) without suffering any down time. ... Do I think it's a great product? Yes, I do. ... Great product delivered by a responsive group of people."

Bob Locke

Combustion Turbine Group
Operations Supervisor
Tri-State Generation &
Transmission Association

72MW

Peak output per generator

450

I/O points distributed across
5 cabinets at Knutson and 4
at Limon

Tri-State Generation and Transmission Association had site control systems going obsolete and older operating systems presented security concerns. In addition, the confidence in the previous controller solution wasn't high since it could be down for an extended period of time. It was time for an upgrade and **OnCore Control System** was selected to replace the older, obsolete control systems.

Challenge

Two of Tri-State Generation and Transmission Association's (Tri-State) power generation plants (Limon Generating Station in Limon, Colorado and the Frank R. Knutson Generating Station in Brighton, Colorado) had GE® Fanuc 9030 balance of plant control systems (DCS) from 2002, that were obsolete and needed to be replaced. In addition, the associated control system HMI was running on Microsoft Windows® 7 operating system that is no longer supported by Microsoft®, which presented security concerns. Tri-State also had low confidence in the existing control systems since they could be in a down state for extended periods of time, which was not acceptable under any circumstance.

The final requirement was that the new control system had to be able to integrate with Tri-State's new GE Fleet Monitoring system.

Solution

Tri-State chose to go with the Nexus Controls' **OnCore** Control System at both their Knutson Generating Station and their Limon Generating Station. The RTU communication (previously all hardwired) was replaced and is now DNP3. Additionally, Tri-State was given AGC control as part of the DNP3 link

(analog setpoints instead of just min/max loads). Tri-State also gained additional and different communications capabilities such as: EGD between Mark VI, EX2100; and the **OnCore** Control System and Modbus to Allen Bradley at Limon and local Historian and remote OSI PI at Tri-State's headquarters.

Results

Tri-State was able to save money on their capital expenditures by choosing to go with the **OnCore** Control System since it was substantially less expensive than alternative solutions.

The **OnCore** Control System was intuitive and very easy to learn and use and that allowed Tri-State staff to quickly come up to speed and be productive rapidly.

The Nexus **OnCore** HMI was installed on Microsoft Windows 10 computers so that Tri-State could secure them properly and there would not be any concerns about the operating system being supported by Microsoft.

Tri-State installed their new GE Fleet Monitoring System and the **OnCore** Control System easily integrated with it.



Frank R. Knutson Generating Station