



### Best of the Best 2016: DOSWELL

Posted on May 23, 2016 by Team CCJ



#### Innovative actuator upgrade injects new life into legacy GTs

Keeping up with repairs of major equipment at an ageing combined cycle often means finding alternative solutions to upgrade obsolete components. The 933-MW Doswell Energy Center, constructed in 1992 using Siemens V84.2 technology, is a case in point. Critical components—such as inlet-guide-vane (IGV) actuators, fuel-gas ball valves, and electrohydraulic fuel-gas actuators—became increasingly difficult to replace or even repair as the years passed because manufacturers either went out of business or no longer supported the components.

EthosEnergy Group is the O&M contractor for the LS Power facility in Ashland, Va, managed by industry veteran Merritt Brown. The plant was challenged to find affordable and reliable replacement hardware from US-based manufacturers that would do the same job as the original equipment and fit in the same space.

According to the OEM, IGV actuators had reached end-of-life and would no longer be supported for repair. Faced with a costly European upgrade option, Brown and his team—Bryan Frady, maintenance manager; Ken Schauer, maintenance specialist; and O&M Technicians Jimmy Fuerte and Tim Cook—reached out to Harold Beck & Sons, a damper actuator manufacturer. It offered a robust solution that proved a perfect fit—one with many advantages over its Siemens counterpart.

**The Beck actuator** features analog control versus the pulsed reversing contactor control in the Siemens model, thereby providing smoother operation of the IGVs and translating to better temperature control. The Beck offering uses a 4-20-mA signal, eliminating the unreliable rotary-dial position indicator and providing more reliable position indication. The Beck actuator also uses no oil, eliminating the chance of leaks and reducing maintenance.

Doswell discovered in 2014 that the turbines' original belt-driven fuel-gas and fuel-oil ball-valve actuators were obsolete. Four actuators are installed on each of the V84.2 silo combustors, a total of 32 among Doswell's four units. The OEM offered a replacement option and also would refurbish the original valves, but the cost of both was staggering.

Site personnel investigated several alternatives, selecting a simple direct-drive gear-style design from Assured Automation offering better control, higher reliability, and instant fit-up to the existing valves. Best of all, the new actuators were priced at less than 10% of the cost for the OEM-offered actuator.

**The plant isn't stopping here.** Plans are underway in 2016 to complete the IGV and ball-valve actuator upgrades on all of Doswell's V84.2 units and begin a retrofit project to replace the original electrohydraulic fuel-gas and fuel-oil control valve actuators with electric-driven components. That upgrade would nearly eliminate the need for even having a hydraulic system on the V84.2, a system prone to leaks, chronic failures, costly repairs, and limited OEM support.