



Case study

DTE chooses Nexus Controls to reset the clock on aging Alterrex excitation system

DTE Energy: Detroit Edison Monroe Unit 4, Monroe, Michigan

“Detroit Edison values continuous improvement and Nexus Controls (formerly GE Energy Control Solutions) provided a great example of this. They worked with us through schedule constraints, listened to our concerns and were creative in scheduling and managing the people working on our equipment. They accomplished in 14 days what typically takes four weeks. It was a pleasure to work with them.”

—Mark Kimmel – Turbine Outage System Lead – DTE Energy, Monroe Michigan

Problem

Detroit Edison, one of the largest operating subsidiaries of DTE Energy, generates and distributes electricity to 2.2 million customers in southeastern Michigan. Detroit Edison’s Monroe Power Plant is the largest generating plant in DTE Energy’s system and the fourth largest coal-fired plant in the country. A brief scheduled outage presented an opportunity to proactively refurbish the plant’s Alterrex excitation systems with new diode bridges. The plant had just 22 calendar days to complete the upgrade. Without a commitment to this schedule the plant would have postponed the upgrade until the next scheduled outage; risking an unscheduled outage if the existing bridges failed.

Solution

The Nexus Controls team committed to the accelerated schedule and replaced each diode bridge assembly with its redesigned Alterrex diode rectifier bridges. The new bridges feature:

- One continuous stainless steel cooling tube per bridge, with all stainless tubing, isolation valves and standard industrial fittings throughout the diode stator water cooling loop.
- A new diagnostic interface panel providing thermal monitoring via bridge mounted thermistors, fuse monitoring and remote alarm connections as well as DCS and unit control interface.
- A simplified bridge alarm annunciation panel with LED indicators and test provisions.

By working overtime and weekends, and collaborating with suppliers, the Nexus Controls factory in Longmont, Co. was able to shave three days off the already tight schedule.

Result

Through the commitment and effort by the Nexus project team, the units were installed and back on line earlier than anticipated. During the upgrade, Nexus Controls acted on customer feedback and implemented several product enhancements, including intuitive labeling of the water inlet and outlet valves at each bridge, and extra terminal blocks to facilitate field wiring.

Benefits

- Updated technology improves Performance – Stator water system cooling delivers full rating without the risk of problems associated with air cooled offerings, such as heat sink fouling, plugged filters and fan failures.
- Smooth Project and Quick Turn-around – Flexibility and commitment to work with customers and third-party vendors ensures projects are completed on time, and to specification.
- Responsiveness Adds Value – Acting on customers' feedback yields product enhancements.

We've been here all along

For decades, Nexus Controls, a Baker Hughes business, (formerly known as GE Energy Control Solutions) has successfully delivered turbine and generator control system solutions for power generation customers around the globe. Our team of experienced domain experts leverage a comprehensive portfolio of reliable control platforms to tailor outcomes to best meet your needs.

