



OIL & GAS

CONTROL UPGRADES

GE's OptiComp BN compressor control solution increases reliability at U.S. refinery

U.S. Refinery Installs GE's OptiComp* BN for Flexible Compressor Protection



CUSTOMER

A Fortune 100 independent refiner and marketer of petroleum products

CHALLENGE

The refinery set out to increase crude oil production by 7% at one facility. To complete the project, it replaced the existing wet gas compressor in the fluid catalytic cracking unit (FCCU) with a new Dresser-Rand motor-driven compressor package. Any compressor loss due to surge or trip damage would shut down the FCCU, and in turn, the entire refinery. Challenges also emerged from conflicting control loops across multiple systems and lack of integration with the process control and vibration monitoring system.

GE AS PART OF THE SOLUTION

GE customized a comprehensive measurement and control solution, providing the refinery with the OptiComp BN compressor control and vibration monitoring system. OptiComp BN enables detection of a rotating stall and enhances surge detection in combination with Bentley Nevada 3500 systems. Patented algorithms combined traditional anti-surge measurements with mechanical measurements, such as radial and axial vibration and axial displacement.

The control system integrated the following auxiliaries:

- Monitor the lube oil system and dry gas seals
- Sequence compressor from startup to operational mode to shut down
- Provide data for trips, alarms, and vibration monitoring

TECHNOLOGY HIGHLIGHTS

- Triple modular redundancy fault tolerance provides enhanced reliability
- Seamless interface for distributed control system and multiple layers of security built in for compressor protection
- Advanced anti-surge and performance control capabilities



MINIMIZED
UNSCHEDULED
DOWNTIME



SAVED TIME
TESTING ON VIRTUAL
COMPRESSOR
SIMULATION



ENHANCED
MACHINERY
PROTECTION
RELIABILITY

Another example of how GE is improving the health of industry.

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