

# CUSTOMER SUCCESS STORY

GE SOFTWARE INSTALLATION MAKES TWO CRITICAL U.S. ENERGY SITES BLACK START CAPABLE

## GE Upgrades Energy Facilities for Black Starts

GE recently completed software upgrades for one of the largest electricity generators in North America, making two critical generation sites black start capable. Both of the company's facilities are natural gas-fired, combined-cycle merchant power plants located in Ohio.

### PROBLEM

As one of the largest electricity generators in North America, the energy company launched an initiative to meet regional market demands for generation assets that have black start capability to restart the grid should power ever go down across the entire system. A black start is the process of restoring a power station to operation without relying on the external electric power transmission network. Normally, the electric power used within the plant is provided from the station's own generators. The energy company selected both facilities in Ohio for black start service capability. To provide optimal response in the event of full power shut down, both facilities required software modifications and cyber security for their existing turbine units controls.

### SOLUTION

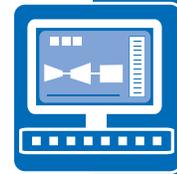
The energy company chose GE, the original equipment manufacturer (OEM), as part of an ongoing partnership to provide the existing 7FA gas turbines with critical software modifications. GE installed modern technology to the facilities' control systems with minimum downtime by combining its prefabricated components with a solution tailored to the needs of the company for black start services. The solution included a Windows® 7 Human Machine Interface (HMI) upgrade as well as a cyber security package featuring Cyber Asset Protection (CAP) software and a SecurityST appliance. The cyber security package helps the site meet the North American Electric Reliability Corporation Critical Infrastructure Protection (NERC-CIP) compliance by documenting baseline configurations and ports and services for normal and emergency operations. This data can further be used to support assessment activities.

### PAYBACK

Upgrading to GE's solution has allowed this site to meet the regional requirement of re-commissioning these critical units, and thus the local power grid, when demand is highest—during a blackout. Further, the hardening of these units from cyber attacks and overall security threats means these controls provide improved availability and reliability of these critical assets to meeting regional power needs.

### BENEFITS

GE's solution enables each facility to participate in the regional market demand for black start capability, in turn increasing the value of the facilities to both the regional customer base and energy company. In addition, GE's cyber security solution enables each facility to maintain NERC-CIP compliance while also helping to protect these critical generation assets against evolving cyber threats.



HMI Upgrade



SecurityST



Cyber Asset Protection Software (CAP)

