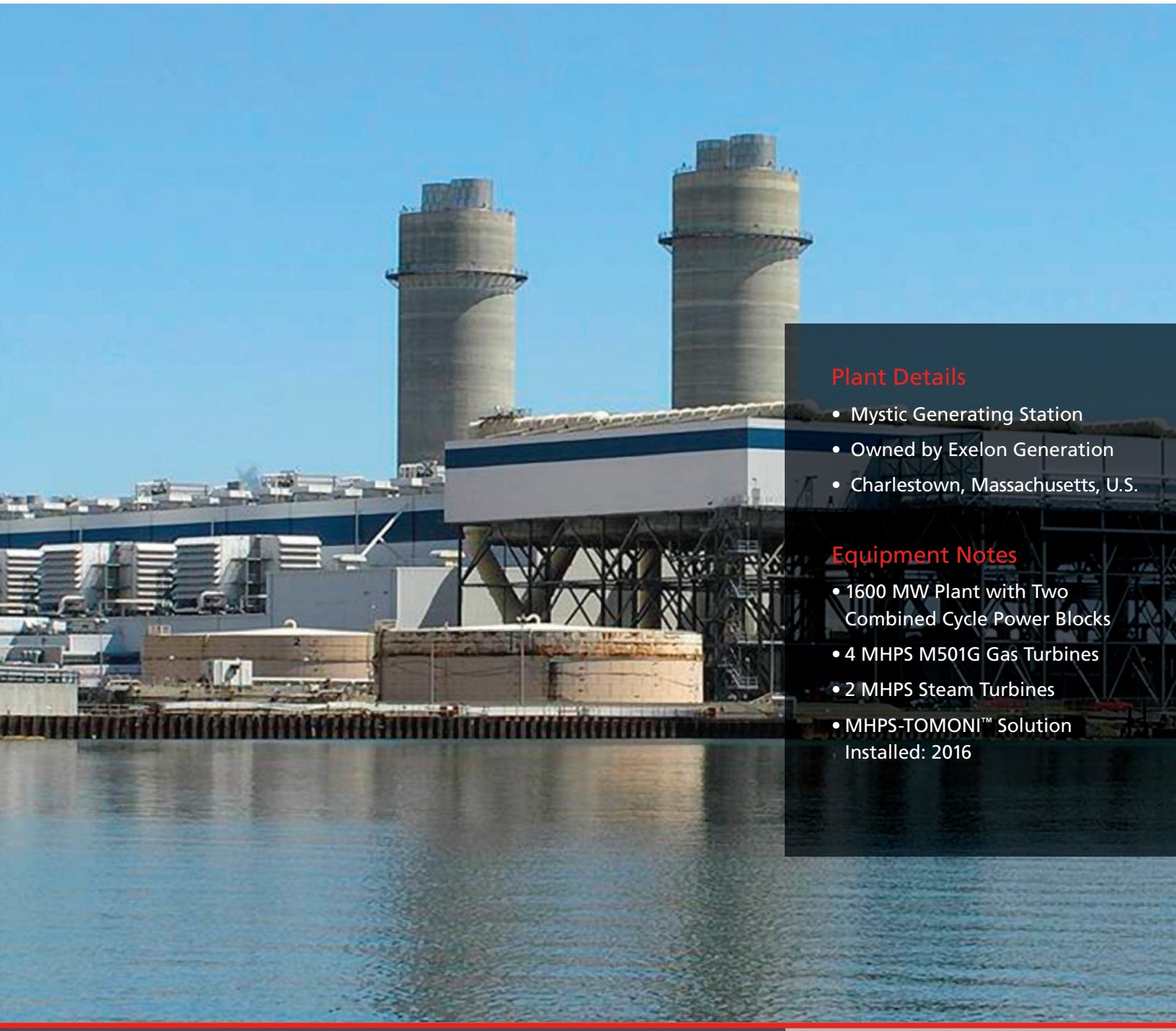
MHPS

Mitsubishi Hitachi Power Systems



Plant Details

- Mystic Generating Station
- Owned by Exelon Generation
- Charlestown, Massachusetts, U.S.

Equipment Notes

- 1600 MW Plant with Two Combined Cycle Power Blocks
- 4 MHPS M501G Gas Turbines
- 2 MHPS Steam Turbines
- MHPS-TOMONI™ Solution Installed: 2016

Improving startup reliability pays dividends for Mystic Generating Station.

MHPS-TOMONI™ Solution Used:

Digital Flame Detection

MHPS Digital Solutions
TOMONI

CHALLENGE

Exelon Generation wanted to improve starting reliability at its Mystic Generating Station. Originally baseloaded when it entered service in 2003, the power station now experiences many more start/stop cycles. When in baseload operation, startup failures had not been a significant issue at the plant, but the transition to more frequent startups, sometimes on a daily basis, had resulted in a decrease in startup reliability.

Reliable startups are critical to smoothly dispatching power plants in today's competitive power generation environment. Startup delays in power plant operation can have a negative financial impact on the owner's bottom line, in some cases more than $100,000 per incident.

SOLUTION

Mitsubishi Hitachi Power Systems (MHPS) reviewed the situation with Exelon and determined the best method to improve startup reliability was to apply the MHPS-TOMONI™ Digital Flame Detection Solution. A software-based flame detection system, which operates in parallel with the physical flame detectors, allows the faster of either system to indicate successful ignition. The digital solution utilizes a controls package of software and relay logic modifications to detect healthy ignition. This allows successful startups even if there are instrumentation issues with the flame detectors.

Before this solution was used at Mystic, it was proven by verification testing at the MHPS T-Point demonstration plant in Japan and validated by fleet-wide data from operating units using MHPS remote startup monitoring.

> **"The startup success rate at Mystic improved immediately when we installed the MHPS-TOMONI solution. Reliable startups are critical to the dispatchability of our plant. You can't compete effectively when your ability to be on line, when needed, is questioned. With this digital-based solution, we've experienced a substantial improvement in startup reliability, which improves our profitability."**
>
> Brian Pettenati
> *Plant Manager at Mystic Generating Station*

RESULT

An MHPS team installed and successfully tested the MHPS-TOMONI digital solution on all four gas turbines at Mystic Generating Station during a planned outage period. The year prior to implementation the site experienced seven failed starts that were attributed to the flame detection instrumentation. The year following implementation, the site had 337 starts with zero startup trips due to the ignition detection system.

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MHPS-TOMONI™

MHPS is leading the development of the digital power plant of the future with MHPS-TOMONI, a suite of digital solutions enabled by decades of O&M and plant knowledge. Our solutions are driven by customer collaboration and use advanced analytics and adaptive control to lower the cost of electricity and achieve environmental and business goals.

For more information about the MHPS-TOMONI™ suite of digital solutions visit **changeinpower.com/tomoni** or contact your MHPS representative.