



**ASCO** Power Technologies™

## Case Study:

Northwestern Medicine Prentice Women's Hospital

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### CHICAGO, IL

Located in downtown Chicago, Illinois, USA, Northwestern Medicine [\*Prentice Women's Hospital\*](#) provides essential medical care for women and their families. In addition to being the largest birthing center in Illinois, the facility's specialists care for women in every stage of life. With so many families depending on successful outcomes, the hospital relies on a robust backup power system to support the continuity of care, even during public power outages.



### PROBLEM

The backup power system at Prentice Women's Hospital includes a sophisticated ASCO Power Control System that parallels three large emergency generator sets. It also includes 66 transfer switches that coordinate the transfer of emergency loads to backup generators when utility outages occur.

The paralleling gear had been installed in ~2006 and had provided reliable backup power service since that time. However, aging devices and components in the system began presenting operability issues. They were also reaching the end of their service lives just as obsolescence threatened to limit the availability of replacements. In addition, the system relied on "old school" technologies that were best understood by the facility's most senior workers. The hospital needed to upgrade its backup power system, but without shutting down electrical power that supports the hospital's life-giving services.

### SOLUTION

ASCO assessed the existing system for an interim solution to the emerging operability issues. "ASCO's service team cleared the issues in two days of work," says Jim Collins, the hospital's Construction Project Manager. Thereafter, the ASCO team evaluated the system's design to develop an optimal long-term solution for the facility's continuing critical power needs and proposed to upgrade the PCS control system using an approach known as "door-and-pan" replacement.

#### *Approach*

Door-and-pan replacement involves the careful inspection of existing equipment and the subsequent design of an entirely new system of controls for the facility's paralleling switchgear. It requires removing obsolete control components and wiring, then installing new devices with upgraded functionality using the latest equipment and control programs. To expedite the work and reduce or avoid downtime, the replacement equipment is custom-designed for the application, then factory-assembled using the new door and pan components tailored to the exact needs and dimensions of the existing paralleling gear equipment sections. Testing at the factory assures quality before the new equipment ever reaches the site. The new pre-wired equipment enables installation and commissioning to proceed very quickly with little or no disruption to facility operations. (More information is available about this approach in the ASCO Technical Brief entitled [\*Alternatives to Power Control Switchgear Replacement\*](#).)

### *Upgrade Activity*

When the time arrived for installation, the Prentice staff and ASCO's service team worked closely to develop a method of procedure that would minimize impact to facility operations. Redundant feeders from the facility's three gensets were arranged to reallocate loads during the work. By setting up the generators as stand-alone units – with no source paralleling during the upgrade activities – the upgrades proceeded according to plan without disrupting backup power availability. The work plan enabled technicians to complete the upgrades during normal 8-hour overnight shifts, reducing the potential for installation errors.

When the work was finished, ASCO had replaced control devices, components, and wiring in the master control sections of the paralleling system, reusing the facility's existing power meters. The new controls included redundant Programmable Logic Controllers and redundant Input-Output pathways to maximize equipment availability. ASCO also replaced the facility's complex system of hundreds of annunciator lights that indicated the status of the 66 transfer switches. Instead, new ASCO Critical Power Monitoring Appliances provided a modern graphical user interface that was more intuitive to use. This offered a range of benefits, such as intelligent alarming that grouped alerts according to priority, as well as one-line diagrams for displaying transfer switch information. The new control interface could be scanned and evaluated more quickly, speeding decisions for responding to power events and conditions.

To ensure that Prentice personnel realized the greatest value from their new system, ASCO's Mike Krason trained the hospital's 24x7 workforce during three separate shifts. "They made our staff comfortable with the new system," said Jim Collins. "The new interface is intuitive for older and younger staff alike, and nobody felt like there were any stupid questions."

## OUTCOME

Looking back, we asked Jim Collins about the hospital's experience in implementing the project. "The new equipment showed up ready to go. It turned out to be the best thing we did." As for Prentice's experience since the upgrade, Jim noted that the new automatic compliance reporting capabilities have been especially useful. "For Joint Commission testing, the system flags non-compliant results. We also run weekly tests to comply with local codes. The new displays are really good."

For its part, ASCO is pleased to play a continuing part in the important work at Prentice Women's Hospital. Like newborns, power outages can arrive at any time. With ASCO's Paralleling gear upgrades, Prentice Women's Hospital can be confident that they will always be ready for both.

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Further reading:

Technical Brief: [Alternatives to Power Control Switchgear Replacement](#)

Technical Brief: [Increasing Power Redundancy](#)

White Paper: [Redundant Control and Communication for Power Control Systems](#)

White Paper: [Power Control System Basics](#)

For additional information, contact [ASCO Customer Care](#).



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