



DemandSMART is the right prescription for major Massachusetts medical center

Berkshire Health Systems reduces energy and taps existing backup generators to raise revenue—while ensuring uninterrupted quality of care

Fast Facts:

Industry:
Healthcare

Location:
Pittsfield, MA

 DemandSMART

Program:
ISO New England Demand Response

DR Strategy:
Curtailment and backup generation

Primary Curtailment Strategy:
HVAC adjustments, elevator cycling, lighting reductions

Annual Payments:
Approximately \$25,000

THE BIG PICTURE

Berkshire Health Systems (BHS) includes Berkshire Medical Center (BMC)—its Pittsfield, MA flagship facility, as well as the BMC Hillcrest Campus (a satellite location in Pittsfield), and the BMC Fairview Hospital in Great Barrington, MA. These three interrelated facilities serve as one of the region’s leading providers of comprehensive healthcare services. Their mission is to improve the health of the people of Berkshire County, Massachusetts and surrounding communities, regardless of their ability to pay.

As a private, non-profit organization, BHS must make careful financial decisions to ensure its ongoing success—while providing the highest care possible. In 2006, it enrolled in demand response

with EnerNOC. BHS voluntarily reduces its energy use by approximately 1.3 megawatts (MW) during peak periods via a mix of energy reductions (lighting reductions, HVAC adjustments, shut-down of selected elevators) and short-term backup generation.

BHS receives payments of approximately \$25,000 annually for its participation in demand response with EnerNOC. It sees EnerNOC DR as an opportunity to meet its accreditation requirements by ensuring reliable operation of its backup generators—while creating a new revenue stream.



Case Study | Berkshire Health Systems



BHS utilizes its backup generation assets to drive new payments to their bottom line through demand response.

GENERATING NEW REVENUES WITHOUT IMPACTING QUALITY OF CARE

Like any top medical facility, BHS has to provide the best possible patient care, which serves as the organization's top goal. The needs of patients guide decisions made at all levels of the organization, including choices made by its facilities group. "We need to maintain the comfort and safety of our patients, under all circumstances," says Joe LaRoche, director of facilities management. "Electricity is a key part of the equation. We can't afford even a few seconds of downtime, which can cause computerized monitors to go offline and reboot. Even a few seconds of interruption can be disastrous in a critical-care context."

The goal is a constant, uninterrupted electrical load—one that keeps all of BHS facilities operating seamlessly, even during blackouts, brownouts, or natural disasters. As a key part of its operation, BHS must follow the strict guidelines created by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), which requires back up generation—and regular ongoing testing. Each of its three facilities has two back up generators, which are designed to supply electricity in the event of a brief or longer-term power failure.

"Our backup generators are designed to be as reliable as possible, and to meet the accreditation requirements from all technical points of view," says LaRoche. "And they're tested weekly to make sure they're operating optimally."

LaRoche was familiar with demand response and thought that EnerNOC DR made sense for BHS, since it takes advantage of resources that it already has—its back up generation—and puts them to work to stabilize the electric

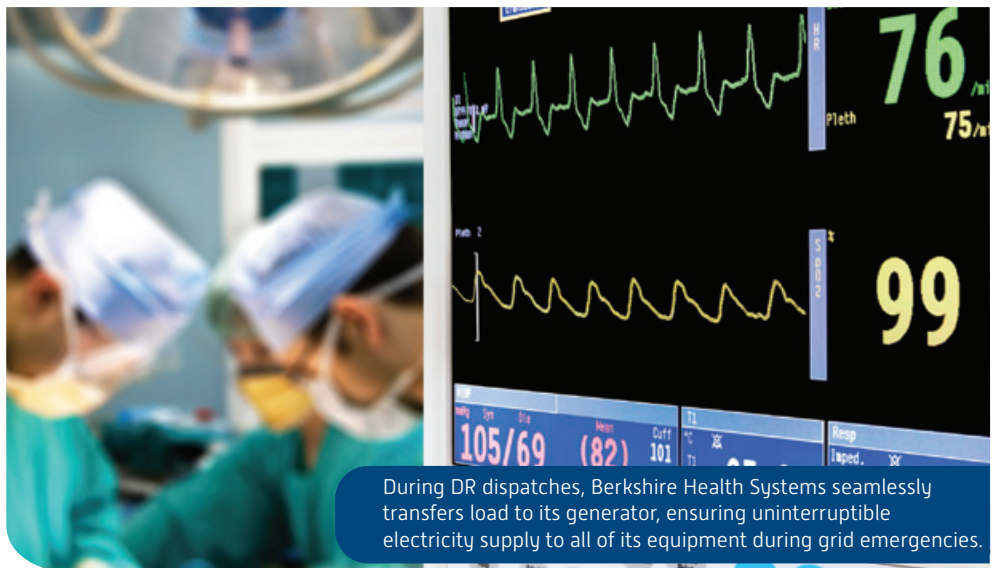
grid. Ultimately, EnerNOC DR protects the environment by warding off an outage—which would require much more backup generation for a much longer period of time.

"We realized that we were already testing our generators anyway, and that the EnerNOC DR program wasn't going to come close to using our 100 hours a year of state-approved generators time," says LaRoche. "So it made sense to put them to work during brief emergency periods."

The funds generated by DR help create a new revenue stream for the BHS facilities group, traditionally a cost center. Like most healthcare facilities, every bit of additional revenue helps ensure its business viability—and its ability to continue to serve the community.

THE RESULTS

When dispatched, facilities engineers at each of the three BHS hospitals receive notification via phone and email. They then go through an energy reduction action list that includes ramping up the generators. "EnerNOC has monitors on our meters," says LaRoche. "But we retain total control of what gets shut off—such as a bank of elevators or lighting—as well as which generators we start up."



During DR dispatches, Berkshire Health Systems seamlessly transfers load to its generator, ensuring uninterrupted electricity supply to all of its equipment during grid emergencies.

The result is a reduction of approximately 1.3 MW of electrical load, delivered quickly and efficiently—without any effect on clinical operations. LaRoche admits that the hospital’s clinical staff was hesitant at first. “But they quickly realized that the transition was invisible to them. We inform our senior administrators when we’re doing DR testing or when an event is dispatches. Otherwise, they probably wouldn’t know.”

The hospital’s \$25,000 in annual DR payments is credited back to operating revenue and used to fund capital projects aimed at boosting energy efficiency. “We get a lot of mileage out of our DR earnings,” says LaRoche.

THE BENEFITS

For BHS—and any hospital or healthcare facility—the most critical benefit of DemandSMART is that it doesn’t affect its clinicians. Healthcare goes beyond “mission-critical” status. It’s literally a life-and-death business, one that can’t afford any inconsistencies in its electrical supply. With DemandSMART, the start-up of (and transition to) backup generators is seamless and invisible to clinicians and the patients they serve. Other key benefits that DemandSMART brings to BHS include:

EMERGENCY READINESS

By testing its backup generators regularly and under load, BHS can be confident

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Joe LaRoche, Director of Facilities Management

in its ability to respond to any and all circumstances—from planned interruptions to unanticipated blackouts. As part of the EnerNOC DR program, BHS is also informed of times when the New England grid is stressed, so it can be prepared.

FLEXIBILITY

With the EnerNOC DR program, BHS has the flexibility to shed electrical load in the way that works best for its facilities group. It retains control over its generators and chooses which combination to start up.

FINANCIAL BENEFITS—WITHOUT PENALTIES OR RISK

The more than \$6,000 in quarterly payments

that BHS receives from EnerNOC are significant and bring a much-appreciated boost to the bottom line. But they are offered without the potential of any penalty for non-participation in a DR dispatch—or for failing to achieve the targeted reduction amount.

REIMBURSEMENT FOR GENERATOR TESTING

Running its backup generators during DR testing and dispatches ensures that they are operating correctly under load—and capable of running its three hospitals under all conditions. Moreover, the time that the generators run counts toward its JCAHO-mandated testing. In effect, EnerNOC is paying the hospital to test its back-up generators, which it would have to do anyway.

What is Demand Response?

Demand response provides payments directly to organizations that choose to reduce energy use during times of peak demand. EnerNOC DemandSMART is the industry’s most comprehensive demand response application, allowing our customers to get the most value from their participation in demand response programs throughout the US, Canada, and the United Kingdom. EnerNOC works closely with customers to define customized energy reduction strategies and ensure successful performance during events. EnerNOC absorbs all costs and protects customers from any penalties that can be incurred for not meeting reduction targets. Demand response helps stabilize your region’s energy resources without requiring construction of new power plants—benefiting utilities, their customers, and the environment.

Want More Information?

Berkshire Health Systems is just one of the many innovative organizations that benefit from EnerNOC’s comprehensive energy management applications.

To find out more, contact Gary Davis at {832} 470-0424 or gdavis@enernoc.com.

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Joe LaRoche, Director of Facilities Management

PART OF AN ENERGY EFFICIENCY STRATEGY

BHS has made significant steps toward optimizing energy efficiency at its facilities. It has completed a major lighting retrofit. Its new walkway heating system melts snow and ice with reused steam. It has implemented an advanced building management system that gives it a clear idea of where it is using energy. BHS sees DemandSMART as a critical

part of its overall commitment to remaining efficient, reducing its load, and helping lower greenhouse gases.

THE FUTURE

BHS is taking a close look at its older buildings and upgrading its heating and cooling systems as a way of using energy more efficiently. With the success of DemandSMART at its three main hospitals,

it’s also considering enrolling its long-term care facilities, which also have backup generators.

“I’d advise any healthcare facility to do demand response,” concludes LaRoche. “If you have to run your backup generators anyway for testing, you might as well get paid for it. Plus, you can be more confident that your backup generation program is working perfectly.”



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