

National Infrastructure Protection Plan
NIPP Challenge

Safeguarding Patients by Enabling Accelerated Government and Utility Response through Real Time Data Sharing of Hospital Generator Status During Disasters

SITUATIONAL AWARENESS

In large scale disasters that cause widespread power outages, emergency power systems at hospitals and other medical facilities are the primary lifeline for maintaining critical operations. Failures of these systems can have deadly consequences and can trigger emergency evacuations, as seen during Hurricanes Katrina (2005), Sandy (2012), and Matthew (2016). These failures are not limited to older systems. Newer emergency power system components can also fail when faced with the challenge of operating for extended periods of time.

An estimated 2,000 plus hospitals have connected remote monitoring and automated reporting technology to their emergency power systems. They provide real time, automated alerts to facility staff and generator service providers any time a mechanical threat to emergency power is detected or if fuel levels run dangerously low. This technology affords an opportunity to provide government and private utilities with real time, early warning of a threat to emergency power at a hospital. Yet, U.S. hospitals do not regularly share this highly valuable data with government or utility officials because protocols often do not exist to govern how this information-sharing should take place.

METHODOLOGY

The Powered for Patients project involved a comprehensive research and development initiative that created a prototype information system to share real-time emergency power system status reports with government organizations and utilities. This prototype combined multiple data feeds from various facilities using different vendor systems into a single, synthesized and real time data stream with a Red, Yellow, or Green risk status indicator. The synthesized data stream enabled fast information sharing, with the goal of accelerating response to a critical healthcare facility, as well as the water and wastewater utilities serving those facilities at risk of losing emergency power.

During the project cycle, the Powered for Patients team partnered with technology providers, hospitals, nursing homes, and large dialysis centers to test the real-time information sharing ability of the prototype.



Source: FEMA Photo Library

RESULT

The project team developed the prototype information sharing system to share real-time emergency power system status. The tool was developed to synthesize data from eight different technology providers and was named the Power PIONEER for its transition to commercialization. The prototype tool was tested with several hospitals to determine its ability to report real-time status on emergency generators.

Additionally, the project team was featured in several editions of the Health Facility Management Magazine to further conceptualize this new approach toward automated generator status reporting. Moving forward, the project team will continue testing its automated and manual reporting processes and recruiting critical healthcare facilities as potential test locations.



Source: FEMA Photo Library