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DOORS &
HARDWARE



Emergency Power
Risk Assessment

Hidden GEM

Offield Family
Pavilion in Petoskey,
Michigan

BY ERIC COTE

How Old is 'Too Old'

Assessing emergency power risks of aging hospital generators

Powered for Patients, the 501c3 nonprofit that works to safeguard hospital emergency power systems, is leading a multi-year hospital emergency power preparedness initiative in California for the Los Angeles County Emergency Medical Services Agency.

The project seeks to ensure that county and municipal agencies, along with electric utilities and critical healthcare facilities, are employing best practices in minimizing threats to emergency power and expediting government, utility and private sector response when threats to emergency power arise during power outages.

A key element of the project is a recently completed census of the emergency power systems in 80 Los Angeles County acute care hospitals. The study of the 271 generators used by these facilities revealed a seriously aging generator fleet, with 32% of the generators over 30 years of age.

According to a life expectancy table in Roadmap to Resiliency, a white paper on emergency power resilience co-authored by Powered for Patients and the American Society for Health Care Engineering, the useful life of a generator is 30 years of age. In Los Angeles County's 15 single-generator, acute care hospitals, nine facilities, or 64%, relied on generators over 30 years of age; three were between 40 and 49 years old, three were between 50 and 59 years old and one was over 60 years old.

These findings beg the question: How old is "too old" when it comes to hospital generators?

No federal or state requirements restrict the use of older generators as long as the generator can pass required tests, which include a four-hour load test every three years. The problem with this approach is that these tests don't reflect the challenge an

outdated generator would face if forced to operate for extended periods of time.

Older generators can present other problems, including difficulty obtaining spare parts when repairs are needed. The absence of automatic shutdown features present in newer generators can lead to catastrophic failures of older generators unless manual shutdowns are initiated.

Paving the road to risk assessment

Los Angeles County officials were very concerned when briefed on the presence of 40-, 50- and even 60-year-old generators in single-generator, acute care hospitals. To address the heightened risk to patients in hospitals with no redundant emergency power, Powered for Patients is developing a confidential risk rating of each hospital's emergency power system.

Single-generator facilities with outdated generators would rank at the top of this list followed by single-generator facilities with newer generators, two-generator facilities with outdated generators and facilities with below-average onsite fuel storage capacity. These ratings will give government agencies the opportunity to pay closer attention to higher-risk facilities during power outages.

Powered for Patients likens this risk rating to the CAMELS rating system used by regulatory banking authorities to rate financial institutions. The CAMELS acronym stands for capital adequacy, asset quality, management, earnings, liquidity and sensitivity. A bank's CAMELS rating is directly known only by the bank's senior management and the appropriate supervisory staff and is never released by supervisory agencies, even on a lagged basis. This system



Tad Radecki, chief of installation operations for PIONEER Systems, Inc., deploys the first Power P.I.O.N.E.E.R. tool at a hospital in California's Los Angeles County. Power P.I.O.N.E.E.R. is an advanced generator monitoring tool that provides automated, real-time text and email alerts any time emergency power is activated or experiences a mechanical problem while operating.



grew out of recommendations from banking regulators in the late 1970s.

Another step being taken by the Los Angeles County officials is funding deployment of the Power P.I.O.N.E.E.R. tool to the 14 single-generator hospitals that participate in the HHS Hospital Preparedness Program. P.I.O.N.E.E.R., which stands for Power Information Needed to Expedite Emergency Response, provides automated, real-time alerts to designated individuals any time emergency power is activated or experiences a mechanical threat.

The first P.I.O.N.E.E.R. deployments took place in August 2021 and more are planned. They represent the first time a hospital in the U.S. has given access to real-time generator threat information to government officials. This improvement in situational awareness will help speed deployment of temporary generators to a stricken facility and allow utilities to assess options for prioritized power restoration.

Estimating number of United States single-generator acute care hospitals

Currently, no census exists of single-generator acute care hospitals across the U.S., a problem Powered for Patients recommends addressing through completion of a national census modeled after the approach taken in Los Angeles County.

As an interim step, Powered for Patients extrapolated the data from Los Angeles County to estimate the number of single-generator facilities and the age of their generators across the U.S. Based on the estimate from the Centers for Medicare and Medicaid Services of 4,749 acute care hospitals, Powered for Patients estimates there are 809 single-generator hospitals in the U.S. with 482 of these facilities relying on generators over 30 years of age.

Among these 482 facilities, 161 would have generators between 40 and 49 years of age; another 161 would have generators between 50 and 59 years of age and 53 facilities would have generators over 60 years of age. It's hard to imagine patients feeling comfortable undergoing surgery in a single-generator hospital with such outdated generators.

A serious discussion within the hospital industry and among policymakers about the number of outdated generators in single-generator, acute care hospitals is long overdue.

Are resource constraints facing hospitals forcing emergency power modernization too far down the priority list? What policy remedies might be considered to ensure patients are sufficiently protected when the single-generator hospitals caring for them are suddenly forced to rely on emergency power?

A robust discussion of these questions will help advance a much-needed conversation about emergency power infrastructure in the nation's hospitals.

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