CASE STUDY

MISSION-CRITICAL BACKUP POWER FOR MEDICAL FACILITIES

NEW HAVEN, CONNECTICUT - USA

BACKGROUND

390 kW Natural Gas Generator

Medical facilities require highly reliable emergency power to protect patient safety, maintain clinical operations, and meet regulatory expectations. When utility instability, planned electrical work, or generator replacement risk threatens continuity, temporary natural gas generation can provide rapid, lower-logistics coverage while maintaining readiness and compliance posture.

Prismecs Healthcare Power deployed a 390 kW natural gas generator as a temporary emergency power solution, supported by commissioning discipline and readiness-focused operations for a healthcare environment.

KEY OBJECTIVES

The project aimed to:

- Deploy 390 kW contingency power to support essential and patient-critical loads.
- Reduce outage exposure during utility instability and backup-power transition risk
- Support compliance posture through structured testing, documentation, and operational discipline
- Enable scalable coverage pathways through modular, paralleling-capable architecture
- Improve environmental fit through lower-emission / low-NOx-ready natural gas configurations

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BACKUP POWER IN HEALTHCARE

The Challenge

Hospitals and medical facilities operate with zero tolerance for outages, high continuous loads, strict emissions/noise sensitivity, and limited tolerance for fuel logistics risk. Traditional diesel approaches can introduce fuel storage constraints, refueling complexity during regional disruptions, and added operational overhead.

Solution Overview

Prismecs Healthcare Power deployed and managed a 390 kW natural gas generator for contingency coverage, supported by healthcare-aware execution, commissioning verification, and operational readiness workflows. The solution combines modular generation capability, scalable redundancy pathways, and lifecycle support aligned to healthcare expectations.

	Challenge	Our Solution	Impact
Continuity Under Utility Instability	Patient-critical operations require stable power through utility events and planned work.	Rapid deployment of temporary natural gas generation with transfer-aware integration planning and commissioning discipline.	Reduced exposure to interruption risk and stabilized operations during elevated outage vulnerability.
Compliance Burden + Readiness Gaps	EPSS readiness depends on consistent inspection, testing, maintenance, and documentation.	Structured testing support, documentation-ready workflows, and readiness-focused operations aligned to facility expectations.	Stronger audit posture and fewer readiness gaps driven by fragmented ownership.
Fuel Logistics Risk During Extended Events	Diesel refueling logistics can become a single point of failure during storms or disruptions.	A natural gas platform reduces refueling dependency when pipeline connectivity is available; Prismecs supports fuel execution planning and resupply readiness as needed.	Lower logistics exposure and improved sustained-event preparedness confidence.
Environmental + Community Sensitivity	Healthcare environments often face tighter constraints on emissions and noise.	Natural gas generation with low-NOx configuration pathway (as applicable), plus permitting alignment support.	Improved environmental fit and smoother compliance alignment for healthcare deployment.
Scalability and Redundancy	Critical-load requirements change, and redundancy needs may increase over time.	A modular and scalable architecture supporting N+1 pathways	Expansion-ready coverage without redesigning the full emergency power approach.

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PRISMECS' TURNKEY SOLUTIONS

Prismecs Healthcare Power provides a single execution path from assessment through operations, designed for mission-critical healthcare environments.

Load Assessment
Critical-load confirmation, transfer approach review, runtime targets, and site constraints aligned to outage scenarios.

Equipment Sourcing
390 kW generator allocation plus accessories and package configuration matched to site conditions and operational needs.

Logistics & Staging
Coordinated staging, delivery sequencing, and site-ready setup to minimize disruption and accelerate readiness.

Integration Planning
ATS/switchgear interface planning and transfer-aware integration approach (as required for the facility configuration).

Commissioning Proof
Startup support, functional checks, acceptance verification, and documentation packaging aligned to facility expectations.

On-Call Operations
Operational support during the rental term with defined escalation paths and response coordination.

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MEASURING SUCCESS

This deployment prioritized speed, readiness, and operational control without adding avoidable fuel logistics exposure

390 kW
Natural Gas Backup Generation Deployed

≥ 99.9%
System availability with PRISMECS O&M

24/7
Continuous operation pipeline gas supply

~20-30%
Lower than comparable diesel generators

15–30%
Lower lifecycle OPEX vs diesel standby systems

<10 sec
To full load standby configuration

OPERATIONAL OUTCOMES

Continuity for Critical Operations
Temporary emergency power coverage designed to support essential and patient-critical loads during heightened outage risk.

Compliance-Ready Execution
Structured testing support and documentation workflows that strengthen EPSS readiness posture for inspections and surveys.

Reduced Exposure
Natural gas platforms reduce reliance on diesel storage and refueling logistics when pipeline connectivity is available.

Scalable Architecture
Modular, paralleling-capable platform supports stepwise capacity expansion and redundancy pathways as requirements evolve.

Environmental Fit
Lower-emission / low-NOx-ready natural gas configuration pathway supports sustainability and air-quality objectives where required.

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