

CASE STUDY

FROM STRUGGLE TO GAINING TRUST: THE SUCCESS CASE STUDY OF DATA CENTER

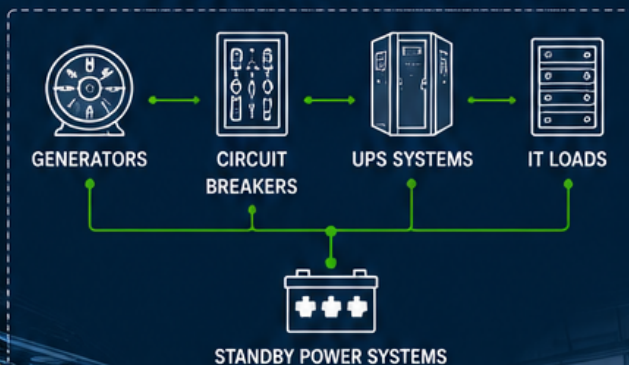
A Case Study on Advanced Load Testing
Solutions for Reliable Backup Power System
Validation and Enhanced Data Center
Operations



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Figure 1: Data Center Diagram



RELIABLE
BACKUP POWER



FASTER
COMMISSIONING



LOWER
COSTS



IMPROVED
EFFICIENCY



STRONGER SYSTEM
RELIABILITY



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From Struggle to Gaining Trust: The Success Case Study of Data Center



Figure 1: Data Center Diagram

1. Overview

A US-based data center is able to provide important storage along with the digital services that are needed for the reliable backup power system so that the operations keep running without any interruptions. As the facility handled most of the global businesses' data and online services, it was highly important to avoid downtime and data loss.

The company needed the advanced load testing solutions so that they could easily test the different systems under different voltage conditions. And the systems include generators, circuit breakers, standby power systems, and UPS systems.

This case study's goal was quite simple: to improve the operations related to testing, minimize the setup time, and overall boost the reliability of the power system.

2. Problem

If, in case, any backup system fails, then it could bring extensive problems for the data center.

And it leads to

- Loss of the sensitive data
- Interruption or service downtime
- Customer trust was reduced.
- Issues related to operations
- Financial losses

The facility also operated in conditions where they required different voltage systems, which are needed for UPS units, circuit breakers, and generators. The older or existing testing methods also needed several load banks, and this work required separate applications for each task. In this way, it made the testing system more complicated and time-consuming.

Due to this, several factors get affected, such as

- The process setup time
- Testing complexity
- Commissioning cost
- Delays in operations

3. Challenges

The data centers usually operated in different voltage configurations, due to which the engineering team found that the testing and maintenance could get difficult.

The facility required a solution that could significantly handle

- Multiple voltage systems
- Integration with the BMS
- Deployment and setup became fast.
- Load capacity gets increased.
- Larger circuit breaker testing

The older load banks couldn't have enough capacity to test a larger number of circuit breakers at a single time. Due to this, the labor work increased, and more testing equipment is also needed.

4. Key Solution

To meet these issues, customized portable load banks need to be developed, which can easily fulfill the facilities' multi-voltage testing needs.

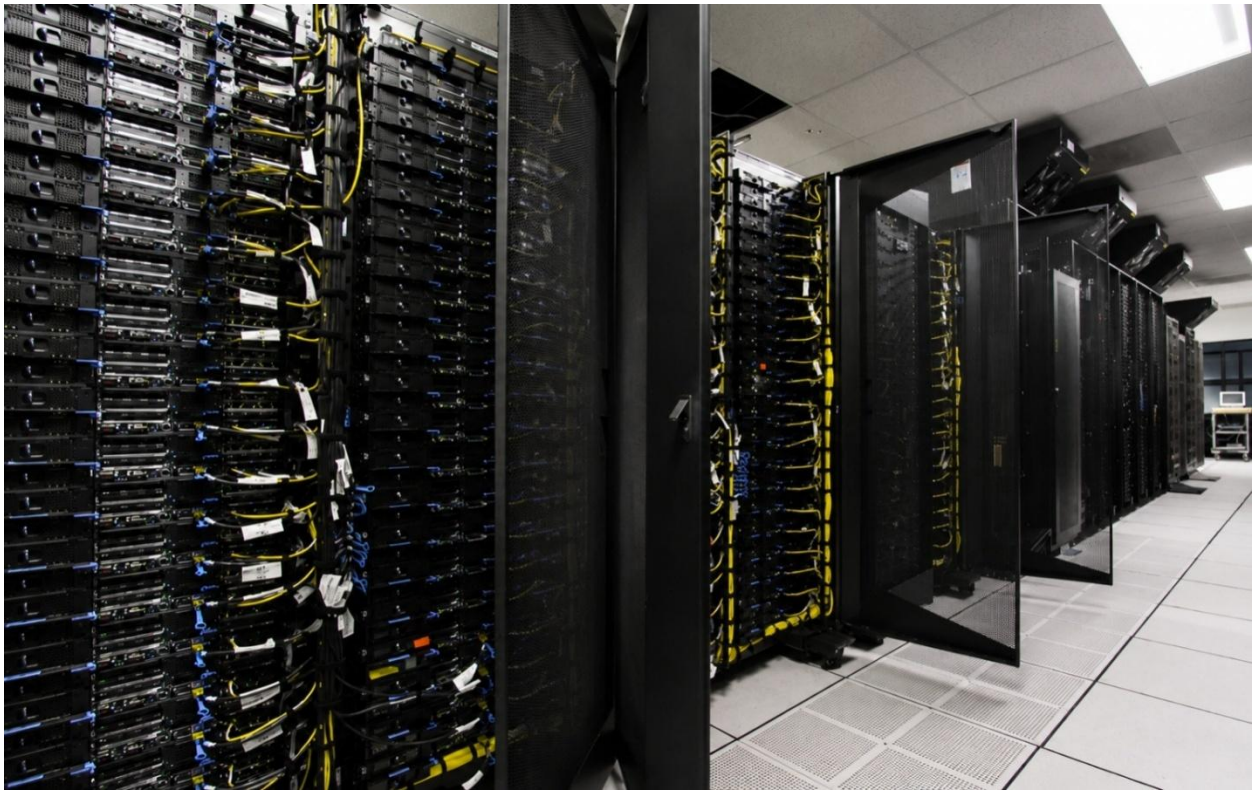


Figure 2: Data Center design

4.1 Multi-voltage load bank design

The portable load bank supported different voltage configurations for three phases, which incorporated

- 480 volt, 60 Hertz
- 415 volts, 60 Hertz
- 240-volt, 60-hertz
- 208 volts, 60 hertz

4.2 Advanced controlling and monetary

The load banking system included the local manual controls as well as remote operation support, which is utilized to control the BMS.

Additional features incorporated

- Monitoring of the digital system
- Data logging
- Adjusted management of the load
- Remote/manual operation

5. Outcome

After implementing the customized load bank system, the data center improvised the backup power testing speed of their testing operations, and their reliability boosted to the next level.

The company achieved the outcomes that are stated below.

- The commissioning operations got faster.
- The setup or testing time was reduced.
- The logistic costs were down.
- Improvisation of HVAC testing
- Backup power reliability got stronger.

6. Key takeaways

Key takeaway 1: Reliable backup power systems are quite important for the modernized data center because they can support the critical digital services. But testing the complicated power systems can become difficult without having the flexible or right loading testing equipment.

Key takeaway 2: By utilizing the customized high-capacity portable load bank, the facility can significantly improve their operations testing efficiency and give a strong, reliable power performance to the system.

This case study highlights the significance of advanced load bank solutions that can help data centers to maintain reliable operations as well as minimize the unexpected downtime risks.

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