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# Success Story: Standardizing Liquid-Cooled Load Testing Across North America

## Background

A leading colocation provider, operating dozens of facilities across the United States and Canada, faced the challenge of rapidly expanding its portfolio of liquid-cooled data centers. With demand for high-density compute clusters driven by AI, HPC, and hyperscale cloud platforms, the provider needed a testing and commissioning strategy that would scale with its growth.

Traditional air-cooled test methods were not sufficient for the complexity and precision required in liquid cooling. Inconsistent deployment practices from site to site created delays, added cost, and introduced risk during commissioning.

The provider sought a partner who could deliver a standardized, reliable, and scalable testing solution — one that would allow commissioning teams to bring facilities online faster, with uniform results across the portfolio.

## Challenge

The provider's objectives were clear but demanding:

- Accelerate deployment timelines to keep pace with rapid customer demand.
- Standardize commissioning and testing across multiple facilities in different regions.
- Reduce variability and downtime by introducing a uniform toolset and workflow.
- Support large-scale deployment — nearly 500 units spread across multiple campuses.
- Ensure operational reliability with service support available during the entire commissioning (Cx) process.

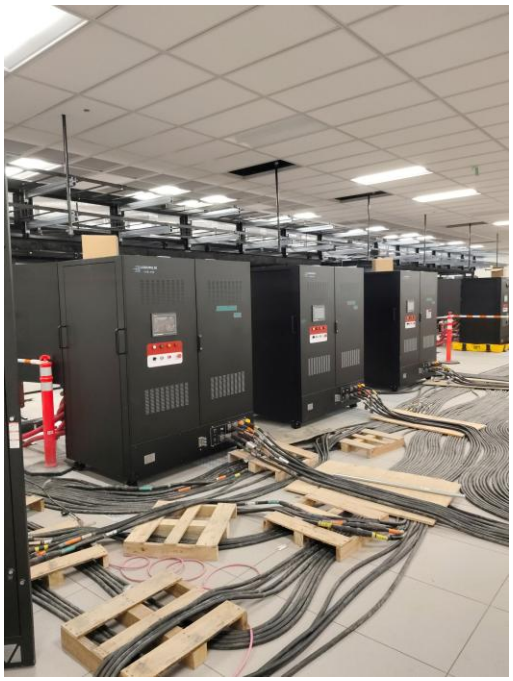
This required more than just hardware. The solution needed to combine engineering design, control system sophistication, and on-site support to succeed at scale.

## Solution

Liquidpulse delivered a comprehensive solution, supplying close to 500 liquid-cooled load banks across multiple facilities, supported by cluster control architecture and dedicated service engineers.

## Standardized Hardware

Each load bank was built with high-performance components and stainless tanks, designed for consistent operation regardless of site or region. Key design choices — such as dual cam-lok sets for cable management, integrated safety systems, and modular serviceability — ensured the units could be deployed and maintained quickly in the field.



## Cluster Controller System

A major differentiator was the cluster controller platform, capable of operating up to 60 load banks (new version capable of up to 120 units) in synchronized fashion. This enabled commissioning teams to:

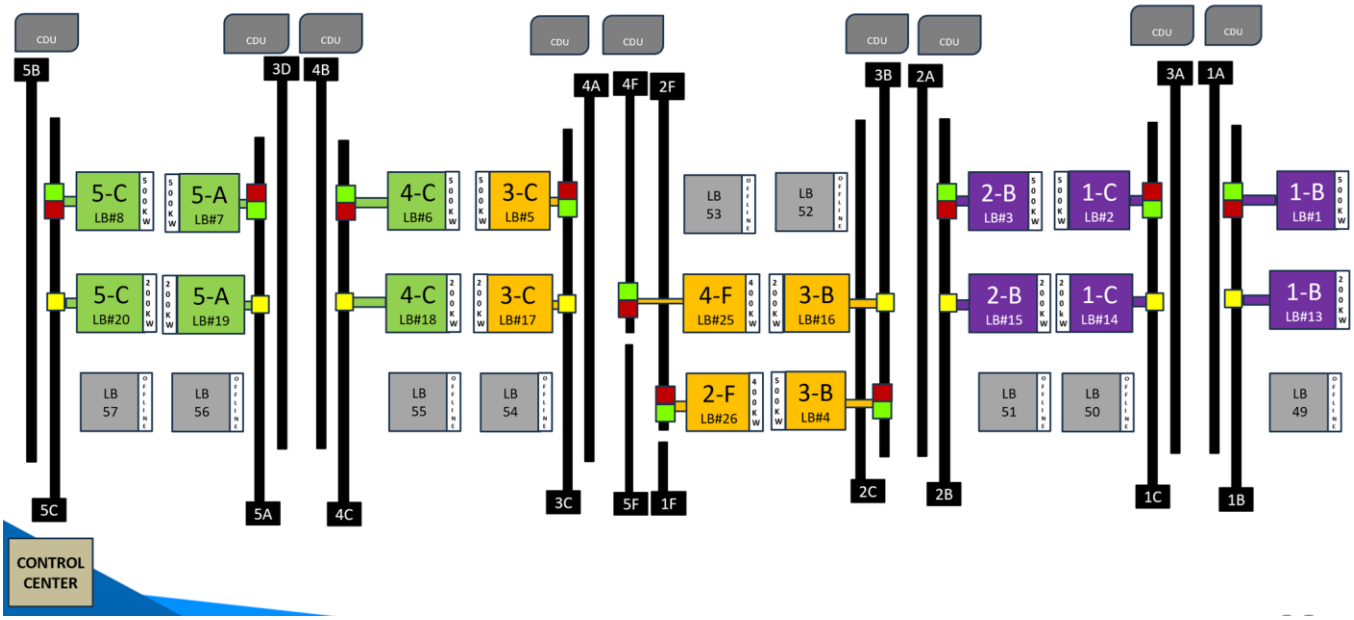
- Run coordinated test sequences across an entire hall or campus.
- Monitor flow, temperature, and power parameters in real time across all units.
- Automate ramp-up and shutdown procedures, reducing human error.
- Maintain consistent data logging and reporting from site to site.

This control capability allowed commissioning managers to execute different integrated systems tests, such as peak load and power failure recovery mode, knowing every unit was operating under the same parameters, and able to remain online through power loss conditions due to the integrated battery-backup on the control panel.

## Dedicated On-Site Service Support

Liquidpulse's service engineering team was embedded on site for the majority of the commissioning duration. Their role included:

- Assisting in deployment and setup of new units.
- Providing immediate troubleshooting and adjustments during live testing.
- Training local teams on standardized procedures.
- Ensuring continuity between projects in different regions.
- This hands-on support not only kept projects on schedule but also transferred knowledge to the customer's internal staff, strengthening long-term operations.




## Results

The results of the partnership have been significant:

Accelerated Deployment - Sites were able to move from installation to live testing in a fraction of the time compared to legacy methods. Pre-engineered connections and modular designs allowed commissioning teams to focus on validation rather than setup.

Consistency Across Facilities - With nearly 500 units deployed and a cluster controller managing groups of up to 60 simultaneously, every facility followed the same test protocols. This standardization minimized discrepancies between regions and ensured predictable commissioning outcomes.

High Reliability - Despite the scale of deployment, only a small number of units experienced issues during startup. In most cases, these were minor and were resolved on site by the service team without delaying commissioning schedules. This high reliability rate reinforced confidence in both the equipment and the partnership.

Operational Efficiency - Standardizing load testing across the portfolio reduced the labor hours required for commissioning and simplified training for new engineers. The provider reported lower project costs and more efficient use of staff resources.

## Conclusion

This large-scale deployment highlights how standardization and embedded service support can transform commissioning in liquid-cooled data centers. By combining:

- Proven load bank hardware (nearly 500 units deployed).
- Advanced cluster control technology (up to 60 units synchronized).
- On-site service engineering throughout commissioning

Liquidpulse enabled one of North America's largest colocation providers to meet aggressive growth timelines while ensuring reliability, repeatability, and long-term operational confidence. The partnership has established a repeatable model for liquid-cooled data center testing, one that scales across borders and positions the provider to meet the next wave of high-density compute demand.