



Case Study:

Load Testing for a Global Social Media Provider

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With the growth of social media communities, a major social media provider required ever-greater capacity to meet user demands. The company responded by constructing and commissioning multiple hyperscale data centers to support its platform and user community. Reliable 24x365 service is essential to user satisfaction, which is why the provider needed to verify the capacity and performance of data center power and cooling systems that make hyperscale computing and communications possible.



Problem

Power distribution, backup generation, and cooling systems must be tested under load when data centers and IT facilities are commissioned and operated. This testing includes:

- Testing power distribution circuits, panels, and devices under load to verify that required amounts of power can be reliably and efficiently delivered to servers and other power-hungry IT and communications equipment
- Testing new, reconfigured, or expanded cooling systems to ensure that HVAC systems can manage the anticipated heat loads and deliver cooling to specific locations
- Testing utility feeds, emergency generators, and any tertiary power sources under load to verify that their capacity and performance meet the demands of each application
- Testing Uninterruptible Power Supplies to verify that they can provide adequate amounts of interim power for prescribed durations when power outages occur
- Testing installed emergency power equipment and systems periodically to verify readiness and comply with industry codes and practices

These actions all require testing equipment and systems at full load. However, when facilities are constructed, commissioned, or periodically tested, full IT and cooling demand is unlikely to be available to verify performance. As additional facilities of increasing size were added to the organization's operations, the company found that effective testing required unique approaches in load test protocols and equipment.

Solution

Commissioning

Load banks apply the electrical loads needed to verify readiness, run generators with adequate load, and adjust electrical characteristics of power systems. During construction and commissioning, a network of load banks can be simultaneously placed throughout data center rooms to test power distribution circuits and equipment. Doing so is an important aspect of verifying the effectiveness of equipment such as circuit breakers that are used to protect people, systems, and devices from overcurrents. In addition, load banks can be used to generate the heat needed to properly "load" cooling and ventilation systems for testing.

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To meet its build-out challenges, the organization sought a provider that could help it customize test routines and turned to Avtron Power Solutions for a solution. Using SIGMA Network Pro software, the firm was able to quickly setup load banks, test systems, record data, and evaluate the results during the commissioning of data centers. To take full advantage of SIGMA Network Pro, the provider began using Avtron portable load banks to meet its testing and commissioning needs. Because of the breadth of its product line, technical expertise, and engineering capabilities, Avtron was able to support solutions for a wide range of climates and applications, including:

- High-altitude sites
- High-temperature applications
- Outdoor installations with high solar loads
- Suitcase-style portable resistive load banks
- Caster-mounted portables
- DC load bank designs
- Medium voltage load models
- Load banks for applications worldwide



Avtron responded to its user's unique needs by customizing load banks designs for use from data center to data center.

Preparedness

After a data center begins operation, a program of regular testing is required to ensure that backup systems remain ready to operate whenever utility power outages occur. To conduct this work, the customer standardized its permanent load bank installations on Avtron designs. With permanent resistive, reactive, and combination load bank models that mount on engine radiators, floor slabs, concrete pads, and more, the customer could access Avtron load banks for any of its applications and facilities. Models such as the Avtron 2755 are often used by this customer to provide the rugged reliable service needed to maintain stringent test programs that enhance power reliability.





Outcome

Today, Avtron Power Solutions is the sole load solution supplier for this major technology and communications company. The firm relies on Avtron to help it solve load testing challenges as it continues to build and operate hyperscale data centers across the globe. With a broad range of load banks and software and the expertise to customize load test solutions for any application, Avtron has become the trusted partner for bringing reliable communications to the next generation of social media users.



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