

KEY FEATURES

- Determines true battery plant capacity per IEEE standards
- Detects sub-par battery plant performance under a controlled environment
- Discharges batteries to a desired level without subjecting critical equipment to decreased voltage levels
- Web access to a documented service report, including:
 - Graph voltage of each string
 - Recommendations for corrective action when necessary
 - String voltage, cell voltage, discharge current every minute of the test

A holistic approach to power plant longevity

Product Overview

Your power plant is the lifeblood of your business: Without it, your business is dead. However, environmental factors, system modifications and the simple passage of time can put your battery plant in jeopardy, threatening the life of your business. Timely assessment of battery health is essential to ensuring a reliable power supply 24 hours a day, seven days a week. That's why Vertiv™ offers comprehensive, state-of-the-art diagnostic battery testing services: To keep your critical equipment running for the livelihood of your business.

The whole is greater than the sum of the parts. Nowhere does this adage ring truer than in your DC power plant. A single loose connection or a weak battery cell can exhaust your power equipment and eventually result in system failure(s). Vertiv takes a holistic approach to the health of your DC power plant to make sure that every facet is operating at maximum efficiency and is clear of environmental or systematic hazards.

Industry experts agree: Battery capacity load testing is the most effective method of determining a battery's ability to provide a reliable power source. Load testing determines where the battery is on the voltage versus time curve, by monitoring each individual cell during discharge. Test results let you know when your battery reserve is low, enabling you to add capacity or modify your plant to bring it up to the desired level of reserve capacity. Load testing also verifies the integrity of the DC conduction path without placing the plant in jeopardy of failure during testing.



Zero downtime. Your business relies on it. That's why you invest in your DC power plant — to protect against a power failure that would bring your network to a halt. But even the most reliable power systems are subject to failure if not properly maintained.

The Vertiv™ edge: more data for greater peace of mind

Phase I: visual inspection

The holistic approach from Vertiv begins with a general system assessment. First, Vertiv field service engineers review all available data on the installation and past maintenance history. Next, they perform an in-depth visual inspection to examine evidence of corrosion, leaks or cracks that could compromise battery health. They also inventory physical data, such as temperature and other environmental factors that could eventually lead to premature failure.

Phase II: initial testing

Vertiv field service engineers perform and/or record ohmic measurements, temperature corrected specific gravity, individual cell voltage, and individual cell temperature to get a general idea of the battery string's overall health, and to identify potentially weak cells. If weak cells are noted, special attention is paid to these cells during actual load testing. If a poor connection is noted, Vertiv field service engineers retorque the cell per manufacturer specifications to ward off overheating that might occur due to high resistance during load testing. Vertiv field service engineers know that your power system is critical; they are able to make temporary power connections and disconnect or remove battery plants from service if required.

Phase III: load testing with thermalscan analysis

Discharge testing begins once a single battery string is isolated. Vertiv field service engineers apply IEEE test methods, 1188 for valve-regulated batteries or 450 for vented-cell batteries, using an artificial load box. With this method, the battery plant is discharged by a constant current until the battery voltage at the terminal cells reaches a battery manufacturer prescribed level, usually 1.75 volts per cell. Vertiv's Intelligent Battery Load Tester automatically records individual cell voltage, string voltage and load current once per minute for the duration of the test and features 200 amps of power for battery recharging. If an individual cell falls below 1.75 volts per cell, an alarm mechanism alerts the engineer and the load box is automatically disconnected. During the discharge testing, Vertiv field service engineers also perform thermalscan analysis utilizing an infrared thermometer to locate problem areas invisible to the eye and confirm the integrity of inter-cell connections. Vertiv also offers a popular option utilizing infrared imaging technology to perform an in-depth thermographic analysis.

Phase IV: battery recharging

Once testing is completed, Vertiv field service engineers recharge the battery string using spare rectifiers built into the Vertiv Intelligent Battery Load Tester provided adequate AC power is available. Most testing and recharge cycles can be completed in a single overnight period, with the entire system back online by start of business the following morning.

The following factors determine the recharge duration:

- Amp hour rating of batteries
- Desired battery voltage level for reconnect
- Rectifiers' total amperage for recharge
- Voltage level of batteries when recharge begins

Phase V: documentation and a plan for battery plant integrity

Vertiv field service engineers summarize their findings in a concise report, which features a complete battery analysis and a power system profile including data on existing load current and percent capacity obtained for each cell and the string. Data is provided in both numerical and graphic form for ease of readability. The report identifies potential weak spots and recommends corrective actions to prevent future failures. Data is presented for use as a highly accurate benchmark for future comparisons of voltage and other critical performance data.

Vertiv sets the standard for taking care of your communications infrastructure network with our secure customer Web site, FreedomCare. Available exclusively to Vertiv Preventive Maintenance customers, the site puts your service and maintenance visit reports at your fingertips. Customers may request an account or login at:

<http://secure.VertivCo.com>