# BATT-RECON
## The Emerging Technology

# Bravo Zulu Releases The New Industry Standard For Industrial Battery Operational Maintenance

**By: Bruce Zeier, President of Bravo Zulu International Ltd.**

**B**ravo Zulu International Ltd., a corporate sponsor of the 3rd Annual Sustainable Supply Chain Summit held in San Francisco, California, September 15 -16, http://events.eft.com/SSC/pres_dl.shtml#day1, astonished attendees with the release of the new industry standard for industrial battery operational maintenance, **Zulu One, … The Battery Optimization Scanning System (BOSS)**. SSC speakers and attendees all commented on how they believed their companies had already minimized their "**Scope One Carbon Costs**," or those carbon costs within the direct control of their company.

"Scope One" company attendees were surprised that their companies had overlooked the inefficiency and substantial carbon cost resulting from current methods of re-charging industrial batteries. While all companies attending had previously maximized savings with respect to lighting, heating, air conditioning and other efficiencies, none realized the magnitude of daily inefficiencies within their battery re-charging operations. Furthermore, as attendees collaborate to help their supply chain reduce their carbon footprint, they realized that any company operating batteries would benefit from BOSS Techniques.

The attendees stated purpose for attending the SSC "Think Tank" was to collaborate with other major corporate partners, government and environmental groups, to provide legislative input and develop the processes to minimize "Scope Three Carbon Costs," or the carbon cost of the products supplied by other companies within their extended supply chain. Most attendees stated that their companies had or were developing rigid requirements for vendors to prove their "carbon cost" for products delivered to the end-user. A viable sustainability program will soon be the preliminary requirement to sell products or provide services to the country's largest companies, before price or other considerations. In the near future, if you fail to have a sustainability program and your competitor does, then you will be at a competitive disadvantage. In addition, most companies will require continued improvement or reduction in the carbon cost of the goods and services provided to them, evaluated on an annual basis.

**How does this new focus on sustainability affect us as battery or lift truck service providers?**
The re-charging of electric forklift batteries within the typical warehousing operation can consume as much as 30 to 40% of the total electrical usage of that warehouse. The BOSS allows management to scientifically determine the true cost and monitor, standardize and fine tune the efficiency of the warehousing battery, battery charger, and lift truck, in a comprehensive manner. The application of Zulu One's patent pending, BOSS Technology and Research, absolutely minimizes the electricity required to recharge warehousing operation batteries saving clients between 10 and 40% of their battery recharging costs. Battery Optimization also provides the data necessary to operate the battery in a manner that extends it's life, reducing the capitalization costs of battery ownership. The forklift and battery service industry's use of the BOSS system, will provide the neces-

sary data needed to minimize the individual battery's carbon footprint.

Zulu One is a device that acts as an interface between the battery, battery charger, battery load tester or the lift truck, and a computer; to scientifically measure, store and compare battery and charger performance data, while the battery is being charged, load tested, or simply operating, in real time, within the battery specific environmental conditions. The environmental conditions are important because batteries operating in a freezer have different characteristics, than those operating in a hot, dry goods facility.

Probes and sensors are used to collect charger wattage consumption and output performance, battery charge acceptance efficiency, individual cell voltage, temperature, and electrolyte levels. This raw data will allow the comparative analysis of the battery cells under charge or load. A battery historical "Cradle-to-Cradle" Carbon Tracker, Electronic Logbook Memory and Vibration Analysis modules are additional features.

Zulu One is also a process, that reads and stores raw battery, charger, load tester and lift truck data into a commercially available database or spreadsheet program, used to analyze the entire battery operation resulting in decisions that minimize operational expenses and carbon costs, while maximizing battery life. The BOSS is a true Cost Saving, Green Technology!

What are the carbon costs to maintain a typical warehouse battery using a "Facility Based" process? The typical facility based process is to; 1) operate the battery until it is showing signs of decreased performance, 2) move the battery from the warehouse to a battery facility using a large commercial truck, 3) apply days of constant current charging (using hundreds of kilowatts) to the battery to reduce the sulfation accumulation, 4) followed by moving the battery back to the warehouse. The true carbon cost would be the summation of the loss of electrical efficiency of the battery before maintenance, the fuel cost of transporting the battery to and from the facility, and the cost of the electricity used during days of constant current charging to remove sulfation.

By comparison, the Battery Optimization process monitors the battery and allows the operator to establish optimum performance parameters. Once the battery exceeds those parameters, far sooner than when the battery is noticeably weaker, it is selected for de-sulfation, acid adjustment, or other preventive maintenance.

BOSS also evaluates the industry-accepted standard of "Equalization Charging," or the periodic battery overcharging to; 1) minimize sulfation, 2) stabilize individual cell voltages and 3) mix the electrolyte to prevent electrolyte stratification. With the advent of the BATT-Recon sulfation elimination system, the battery no longer needs this periodic and electrically wasteful overcharging process. The BOSS

system will determine when the levels of sulfation exceed operational parameters and then apply an infrequent de-sulfation process that costs about 15 cents in electricity, as a substitute for numerous, repetitive equalization processes costing much more.

Battery Optimization is a true Cost Saving Green Technology that allows the operator of the battery to scientifically minimize the battery's electrical re-charging and carbon cost, while extending the life of the battery. The lift truck or battery service companies that offer a Battery Optimization System, will be providing another "State of the Art" value added service to their product mix, as well as becoming leaders in the emerging "sustainable marketplace." For more information on Battery Optimization, please call Mr. Bruce Zeier, President, Bravo Zulu International Ltd., at 951-928-0595, email us at sales@battrecon.com, or contact a Batt-Recon, Zulu One service center near you.