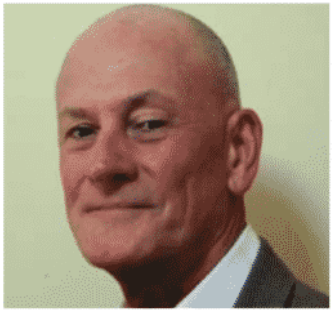
Brian Hanking, Generex: Everyone Wants Run-Time, But It Comes At a Cost

Q&A with Brian Hanking, Generex: Everyone Wants Run-Time, But It Comes At a Cost



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by Josh Anderson

NEW YORK, NY — Brian Hanking is the Vice-President for Business Development at Generex. He brought his innovative spirit and eye for future market trends from Great Britain over 20 years ago when pioneering modular battery monitoring for critical battery management. He is now a US citizen and North Georgia resident with close to 30 years' experience in the critical power storage arena and is a globally recognized and respected industry expert in the field of battery monitoring, management and predictive analysis techniques. Brian is an active member of the IEEE Power and Energy Society and his work has resulted in multiple patents, innovative products and ground-breaking techniques in critical power all which continue to shape how critical energy storage assets are monitored, managed and maintained today.

CapRE: Thanks for chatting with us Brian. We were glad to see you at our Southeast Data Center Summit Spring Update. Please share with our readers a bit about your perspective and your business.

Hanking: Our business is critical battery monitoring. I originally pioneered what was arguably the first modular continuous battery monitoring system for critical power and brought it to the U.S. twenty years ago. Prior to that most battery monitors were single boxes with many wires all over the place. The market in the U.S. has always been a little more advanced due to the distance power has to be transmitted and the somewhat more virulent weather that it has to endure, compared to the UK and Europe (no tornadoes, hurricanes, ice storms etc., although notably flooding is becoming an increasing problem there). For these reasons, although not perfect by any means power transmission there tends to be not as big of an issue as it is in the U.S.

CapRE: So now you work with Generex.

Brian Hanking, *Vice-President for Business Development, Generex*

Hanking: Yes. They have a system they've been selling in Europe for about 15 years and it's slightly different, in that it not only monitors the batteries but also balances the float voltage to ensure every battery in a string is held to the precise float voltage recommended by the manufacturer. Typically, under normal circumstances, what happens is, a user looks at the battery and what the float voltage should be, he multiplies it by how jars there are, sets the charge voltage, and then connects the string to it and that's it.

CapRE: Then what happens?

Hanking: Well that's fine in an ideal world. Most chargers in these applications are constant voltage and maintain that charge voltage to what it is set at but in reality, within the string, some of the batteries will float at a lower voltage and so some must float at a higher voltage. The result is that over their life, some batteries in the string get constantly over-charged and some get under-charged. Very few actually get exactly the right float voltage and the whole process is actually very "hit and miss".

Due to the commoditized nature of lead acid batteries no one considered rectifying this problem until Generex tackled it. The Generex system regulates the float voltages to extend the life of the battery itself. It also means that the string performs better. Generex evens out that string to make sure you get maximum performance. My role is simply to make people aware that the technology exists and to educate them on the benefits possible.

CapRE: That's important stuff. So how have the past year or so been going for you?

Hanking: It's an interesting time in the market because operators are thinking more and more about their stored energy capacity. With the awareness of new technologies entering the marketplace end users are not only considering who's lead acid battery to use but now thinking about which actual battery technology to use. There is a wide range of Lithium Ion chemistries being made available as well as other technologies such as Nickel Zinc so the next few years could begin to look very different in the battery room.

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The critical power market moves fairly slowly in some respects and some of these technologies are very new in critical power terms and there are many things to consider. As an example, although there are many different Lithium chemistries, every lithium battery has to include some electronics inside it. When a manufacturer says that a Lithium Ion battery will last 15 years, they have to be sure that the electronics will also last that long.

I am not saying they won't, but there are going to be more parts and that means the possibility of more to go wrong. It's rather like putting 250 TVs in a room and expecting them to all to last 15-20 years. Nickel Zinc is another very interesting technology, with a higher power density than lead acid, and the ability to withstand pretty extreme temperature ranges and charge and discharge rates, it has less energy density than Lithium Ion but it doesn't require any internal electronics so in that regard is a little closer to what the critical power industry is used to and that technology is coming along at a pace now too.

CapRE: So where do you think things will head in the next couple of years?

Hanking: Generally speaking, it seems that data center run-times are becoming a lot shorter. 20 years ago end users wanted run times of 25-35 minutes or more. End users have realized that if a generator doesn't start and get in sync within 30 seconds or so then something's wrong and there is more than a good chance that even 25 minutes isn't going to be anywhere near long enough to fix the problem. As a result, we are seeing shorter design run times for batteries in data centers but with more intense monitoring of those smaller batteries. In effect batteries are tending to get smaller or at least have fewer strings but with more critical monitoring and management around them.

Brian Hanking, second from left, and colleagues serving on the panel "Best Practices for Planning and Managing Tenant Fit-Outs in Wholesale and Colocation Data Centers" at CapRE's Southeast Data Center Spring Update in North Charleston, South Carolina, March 28, 2018

Clients are aware that their critical batteries are quite an overhead for a data center operator so I believe this trend is the right way to go. Having a smaller battery with monitoring (and particularly management on it) is very much preferable than having excessive banks of batteries where the user is unaware of the condition until a quarterly PM is done. That is a risky strategy and just not conducive to minimizing overhead in today's competitive data center market.

CapRE: Tell us more about your experience handling that piece of the puzzle.

Hanking: End users, again particularly larger operators, are aware that batteries can be a huge overhead for data center operations. One of my previous roles was actually in analyzing such client data for them on a regular basis. We would typically look at, in some cases at say, over 80,000 batteries worldwide for a particular client and assist them not only in spotting failed batteries 24×7 but managing the asset for them. We would run a predictive analysis on those batteries to make sure they were aging as expected and going to last their forecasted lifetime and that they didn't have problems while also being able to advise on which battery systems to replace out each quarter.

I believe that same requirement has always been there, even for the smaller operators but surprisingly the fact gets missed that having monitoring is only half the equation. It is who is looking at and trending the data and what the alarm settings are set to that is the other half.

CapRE: What challenges exist out there for the battery monitoring space?

Hanking: I think the one thing that has remained constant throughout my years in the industry is that everyone wants and needs run-time but everyone wants the battery for as little cost as possible, despite the importance of that run time becoming ever more critical.

When it comes to the new technologies, I am not touting one over the other but the underlying concern for me is that the building regulations keep pace with them. Clients that go for new technology have to be aware (and maybe even be ahead) of the building and fire regulations etc. for that particular battery type. EPA regulations too, especially when recycling time comes around. To its credit, lead acid saw the green issue many years ago and can typically recycle up to and beyond 98% of that battery in some case.

CapRE: Last question. What did you think of our Southeast Data Center Summit Spring Update in North Charlston?

Hanking: It was an interesting event where I think end users hopefully had some good take home points. I think anyone that is involved in the business realizes that you never get to the point where you don't learn something new every day.

In my area, it still amazes me that data center operators are still interested in talking about the basic technology behind batteries, including what they need to do to look after them. They realize that the only way to get continuous power is through batteries (unless you're running fuel cells or rotary machine constantly, which is a whole other subject segment for CapRE!). In whatever form, critical batteries are always going to be a necessary evil.

CapRE: We're glad to hear you were able to connect with those folks. We'll see you next year.