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You Can Go Home Again: T&D Editor Visits His Roots

Rick Bush | T&D World Magazine

Dec 13, 2013

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Rick Bush and former Georgia Power Lab Manager Hollis Reese demonstrate that you can go home again.

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I left 19 years ago. I left not only my family, but also the lab and my familiar surroundings. I left my friends at the lab where I had worked for 22 years. I left, aided by a generous buy-out package, and moved to a new city and started a new career here at *T&D World*.

But now, 19 years later, I was headed back to my roots. I headed home to see Rick Hartlein, who was not only my workmate, but also my college roommate. I headed home

to see my mentor and soul mate Hollis Reese, a prince of a man. Hollis invested himself in me; he saw potential in me I couldn't see in myself. Thank you, Hollis, from the bottom of my heart. And I was headed back to see compadres I had worked with most every day: Tom Champion, Ray Hill, Barry Fairly and that most conservative of men Dean Williams.

When you invest 22 years in a place, you would like to see that those years made a difference; that there is some evidence that you'd been there; that someone picked up where you left off; that someone had added a little water and fertilizer to what you planted earlier.

What I found thrilled me.



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IBM White Paper: Gaining Insight from



Rick Hartlein, NEETRAC director and former college roommate of Rick Bush, examines underground cable and assemblies extracted from the field.

Not only had the facilities grown, but the lab had mutated from a facility that had focused on underground to a full-service facility covering all aspects of T&D. And new DNA had been introduced with so many slick research initiatives now coming into being.

There are 38 members that make up the organization now called NEETRAC (National Electric Energy Testing, Research and Application Center). This lab, once owned by Georgia Power, is now a Georgia Institute of Technology facility. Research and testing that had been done predominantly for one utility is now performed for multiple utilities and vendor companies across North America — and my old pal Rick Hartlein is now the director of this center. And with the Georgia Tech affiliation, NEETRAC has easy access to some of the brainiest professors anywhere. Did I mention I am a proud Yellow Jacket and a Rambling Wreck from Georgia Tech?

The confluence of opportunity and need are providing NEETRAC members with an opportunity to shape the future of our industry. For example, NEETRAC has a project funded by the Department of Energy ARPA-E program, where it is evaluating innovative methods to control power flows on the distribution grid. Frank Lambert, NEETRAC distribution manager, is running this project, and expects to test several devices and systems that will be sorely needed as we strive to control an increasingly complex power-delivery system.

Just think about the difficulties we face on the distribution system. We must now respond to two-way flows along with disturbances caused by perturbations to the force; perturbations that include grid-connected roof-top solar, distributed generation, energy storage, intermittent wind and electric vehicles.



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Working out of this test lab on wheels, NEETRAC Research Engineer Josh Perkel is performing diagnostic tests on a utility's underground cable circuit.

NEETRAC has done similar pioneering work in controlling power flows on individual circuits on the transmission grid. The lab has tested devices developed by a Georgia Tech professor to inject series impedance on individual transmission lines. These devices offered by Smart Wire Grid are now up and operating on the Tennessee Valley Authority and Georgia Power systems.

When I worked at Georgia Power, I was involved in an EPRI-funded project run by Vito Longo (now *T&D World's* technology editor) to dynamically rate overhead lines based on weather conditions. Working with Georgia Tech Prof. Bill Black, we developed and validated models that enabled control centers to rate lines dynamically based on wind speed, wind direction, solar incident radiation and ambient temperature. Now, 20 years later, we have added the ability to discretely dispatch power flows on the T&D system to more closely match the dynamic capacity available on the system.



NEETRAC Distribution Manager Frank Lambert (who has the distinction of having survived managing Rick Bush) manages a DOE ARPA-E-funded project to evaluate control power flow devices.

A real advantage of third-party laboratories including NEETRAC is that they can provide unbiased, objective testing results. For example, NEETRAC recently installed an underground 138-kV test loop in its high bay. Here, vendor and utility engineers witness the response of the cable, splices and terminating systems to accelerated voltage and

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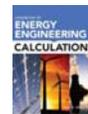
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Temporary Grounding for Lineworker Protection

This essential safety reference shows how to install grounds on de-energized lines so workers are protected if the lines accidentally become energized. Covers basic grounding concepts, overhead lines, underground cables, and vehicles.



Personal protective grounding is an important subject, but it is not well understood by some linemen. This book

current withstand testing. So a utility installing an underground system would have confidence in the individual components and that the components would play together well.

Too often, we get so busy in the day to day that we miss the bigger picture, so this trip back in time helped me gain perspective on those early years of my career.

The last duty my mentor Hollis Reese performed at the research center was to transfer the governance of the laboratory from Georgia Power to Georgia Tech. Both Hollis and I were thrilled to see that the industry continues to have access to these fine facilities and to the team that still calls NEETRAC home.

Editors note: To see more photos from Rick's "You Can Go Home Again" tour, visit <http://tdworld.com/gallery/neetrac-testing-labs>. To learn more about NEETRAC, visit www.neetrac.gatech.edu.

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rganatra@cmewire.com on Apr 24, 2014

Rick,

Nice article. It is always good to go home and visit. NEETRAC staff and their testing capabilities are a tremendous asset for the industry. Thanks to the talented staff at NEETRAC, the complex 138 kV test loop you described in your article above was feasible for Viakable S.A. de C.V. (parent of CME Wire and Cable in Suwanee, GA) and our accessory partner G&W in this project. We are looking forward to presenting the results of this testing in the near future.

Ravi Ganatra
Engineering Manager
CME Wire and Cable, Inc.
A Viakable Company

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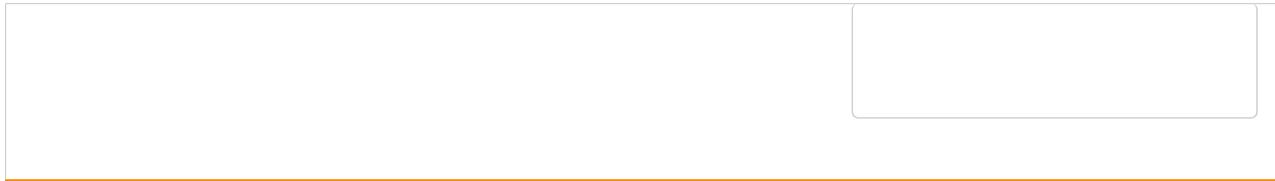
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