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HERE COMES THE SMART GRID

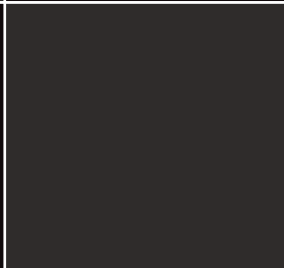
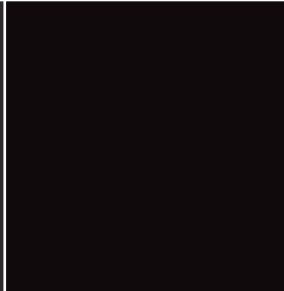
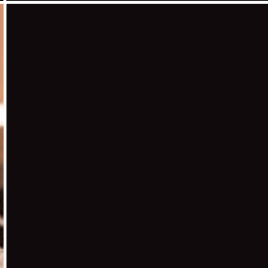
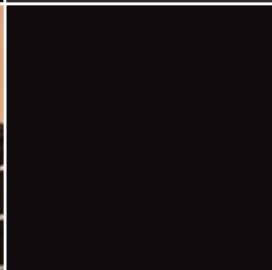
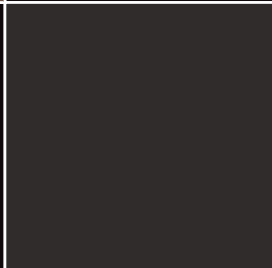
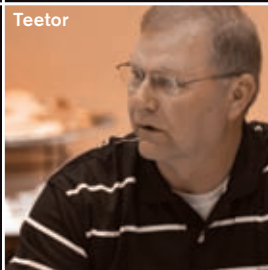
Senior Operations Executives Address the Challenges Ahead
By Warren Causey // Photos by Dianne Brogan



UTILITY OPERATIONAL EXECUTIVES, INCLUDING CHIEF operating officers, vice presidents of operations and others, are well aware of the intelligent utility enterprise and smart grid movements sweeping the industry. But they also say it's probably coming more slowly than many who see an impending energy crisis looming in the United States and the rest of the world would hope.

Utilities remain somewhat crippled with respect to embracing a digital transformation because operations and engineering still operate as a separate silo from the information technology function. Increasingly, information technology managers seek to install more highly unified systems across the enterprise. Unfortunately, many operations executives continue to look upon IT as a support function, instead of seeing IT as keeping information derived from real-time systems and enterprise systems. When operations executives overlook the advantages of fully integrated information systems, they risk coming up short of the tools they will need in the near future to deal with many pressing issues.

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ENERGYBIZ Many people are proposing visions of the intelligent utility enterprise and smart grid as partial solutions for many of the problems that the industry is facing right now, including demand explosion and supply constraints. This implies that utilities will become more real-time all the way from the grid to the boardroom. Is your utility working to link real-time data from the field with the enterprise systems to enable an intelligent utility?

ORTEGA Yes. In the last year or two there's been a lot of discussion around the smart grid. That term is pretty common at the table now and we've sat with many a vendor to discuss it. But it's very much in the initial stages of what each is doing and where they are. One thing we've struggled with is who has the lead. Is it IT, operations, or engineering? Why isn't engineering taking the lead? Is IT support for engineering? It's all those kind of issues we're discussing.

VARN Six months ago, we started a formal group within the organization for an initiative called grid smart. We're looking at several different ways to try to tackle some of the issues. There's a group that works on self-healing distribution systems. Each one of the major groups within the grid smart initiative is headed by at least a director level and the executive sponsor is an executive vice president over the utility group who's right next to the chair.

RAUBER I think we're in the same kind of mold of thinking about the intelligent utility. I don't see it necessarily as being something new. Running grids and operating

them are evolving. The utilities and the power systems can become more intelligent. Pushing real-time data to the back office probably will be farther down the road.

CHACKO In March, we announced what we call our Smart Grid City initiative in Boulder, Colo. We are planning to have about 10,000 to 15,000 smart meters in place by August. What we're planning to do is convert two of our substations and five feeders into an import called a smart substation project. Also, at the invitation of customers, we're going to be installing in-home programmable devices that we can, hopefully, use to fully automate home energy use. Our plan is to have this first phase done by August and then have the entire city on board and completed by the end of 2009. Then we will have conversations with the state, and the regulatory officials, to consider a potential larger deployment in the rest of our eight-state service territory.

LINAHAN We're a small utility with 31,000 electric meters. We're a customer-owned utility, very conservative. We're always looking at the new technology and trying to pencil it out for a business case, but in many ways, it doesn't work. The most we've been able to do is to look at automatic drive-by metering just from the standpoint of access issues, dog problems, safety, things of that nature. But to do a full deployment just doesn't pencil out because we have over a thousand customers per square mile.

ENERGYBIZ Is your organization focused on achieving greater reliability?

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EADES To us, that is very much a customer dependent consideration. If we have a customer in our system that would require such a high reliability level that they would come to us and say, “We must have this type of reliability,” then we would pursue it. I do not know that we would pursue it without having the request brought to us.

LINAHAN We put in automatic transfer switches if the customer requests it and we’re capable of doing it. The first run is usually easy, the second one a little bit more difficult, and the *n*th one is not always available, and that is one of the big issues. When you’re looking at planning your capacity, all of a sudden if you lose a feeder and maybe you have a big load that transfers to another one, you could burn down your circuit, so it’s a little bit of an operating problem. So we don’t want to get into automated switching too much. We normally have about 185 outages a year, and most of them are individual homes that one person, a lineman, can go out and take care of. Very seldom do we have a



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feeder issue, and when you look at adding all this stuff it’s a lot of resources. You’re talking about lots of bucks. When you’re looking at self-healing, you’re looking at a lot of cost, you’re looking at requiring a pretty good engineer to be in tune with all that stuff, and what happens if he leaves?

DASCHBACH We’re in the Baltimore-Washington corridor, and we have a large customer base that is either government agencies or contractors that support the defense community. The idea of duplicate feeds and automatic changeover is very commonplace for us, so we have many customers with two feeds from different sources and a change-over at their location.

Our service operators, our first responding linemen, are skilled at dealing with those issues when it comes down to putting the system back to normal again. To introduce artificial intelligence and to have the system operate itself is a place that we’re trying to go. But frankly, we’ve had communications difficulties between those units trying to talk to each other and come up with a safe and reliable scheme. Feeder-level automation is still pretty control-room based. We’re just sort of teetering. We’re looking at having artificial intelligence doing the feeder-level switching.

TEETOR Our customers mainly are rural. We do have two ethanol plants on our transmission system that

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... OUR REAL-TIME GROUP HAS BRIDGES WITH A LOT OF THE BACK OFFICE.

take service from us. The ethanol plants are the biggest ones that need dual feed, and they push that pretty hard. At this point, the one that we serve is just on a radial, but we have capability, or we've built into it two 10-megavolt ampere transformers that can switch back and forth. So it's not really a dual feed for transmission. It's a dual feed for the distribution. I'd like to see us have some more smart switches out there that have automated transfer, especially around some of our bigger cities.

ENERGYBIZ One of the issues that has become prominent in the industry is the division of information between real-time and back-office systems. You have real time in operations and engineering departments. Then you have information technology and the back office and those have been called silos. Are those silos breaking down at your utility?

ORTEGA The short answer's yes. There's more communication, but there's still an opportunity to improve

that. I think our real-time group has bridges with a lot of the back office. They work with the ops people plus the IT people who give the line-up for support, which they all do, frankly. So I think the short answer is yes.

VARN A couple of states that we serve are regulated, and information sharing is somewhat restricted. We have some rules that we have to follow, certain compliance rules. In general, though, within the rest of the organization, I don't see any limitation on information that's shared — none whatsoever.

RAUBER In the past, just the nature of the groups, the real-time and operations information haven't necessarily come together with the back-office side. But as this new technology comes along, it's definitely bringing about a coming-

together. That's not really a breakdown of silos, it's just that the two groups need each other to each accomplish what they need to get done and they come together to do so. At least that's what we're finding. It's been new, and it takes a little getting used to, getting to know some different people, that sort of thing. But I think it's both sides seeing what has to be done if you're going to be customer focused. If each side sees how it works for better customer service, then they chip in.

CHACKO I think so. Back in 2002, we created a data warehouse, and that kind of helped us in breaking down some of these IT silos. We have our geographic information systems leveraged into this common database repository. We have a work-management system that's tied into the warehouse. Depending on what I need, I can call the person in charge of the data warehouse and ask for a report, and I will have gobs of information coming out. We have that on the gas and electric side. That's one of the ways we have been able to get around the silo mentality. ☺