A Look Ahead: Insights from Leaders

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on 2025 & Beyond

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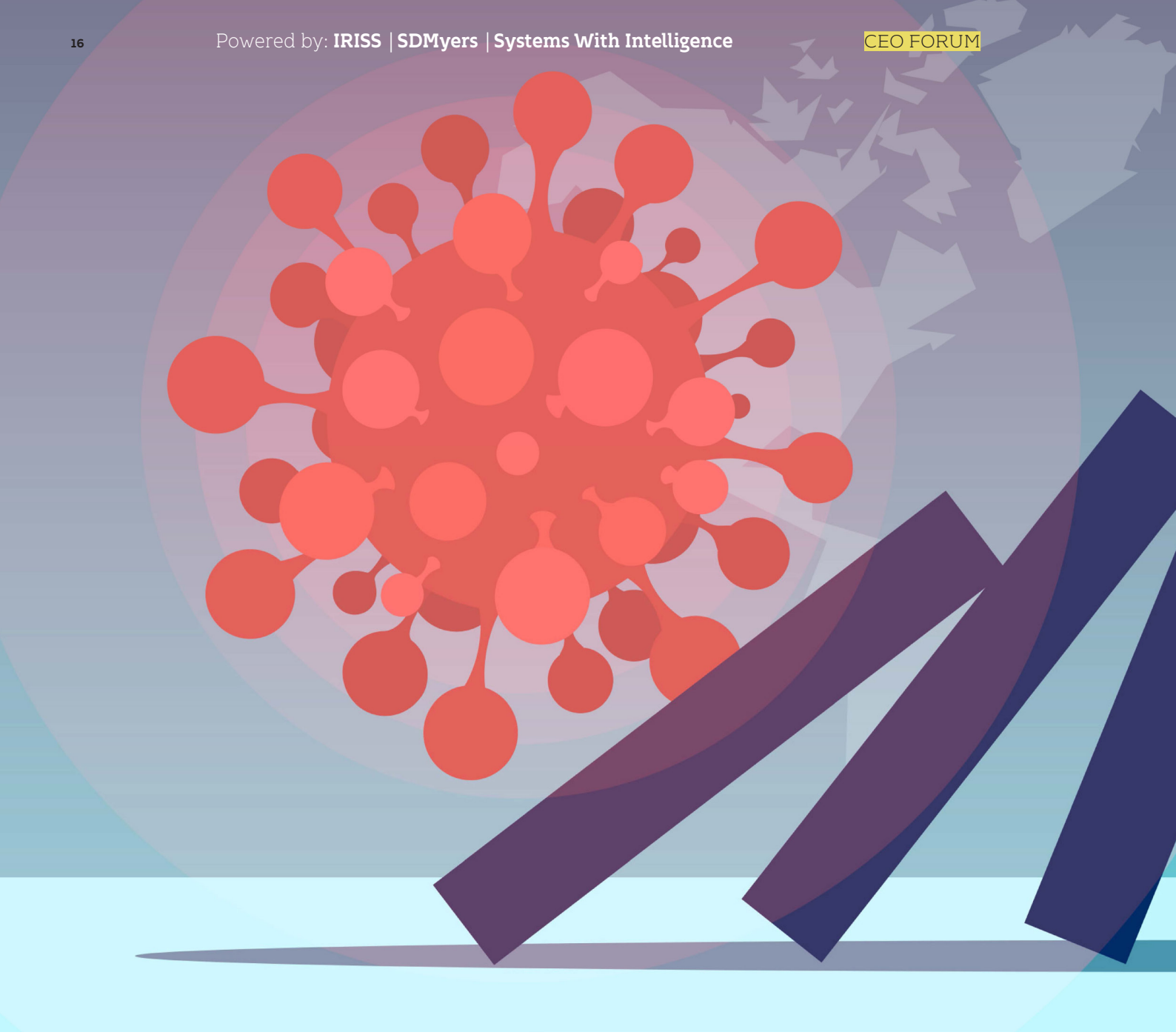

Alan Ross: Welcome to Part 1 of the CEO Forum. Part 2 will be presented in our May issue. You can view the entire CEO Forum now by going to www.powersystems.technology/ceoforum.

There are more changes in technology today within the power industry, arguably than ever before. We are going to address many of these changes, the forces behind them and what that means to the future, with three dynamic company leaders who are charting the course for their companies.

Our guests for our CEO forums are Jon Bucciarelli, President of SD Myers, Angelo Rizzo, Founder and CEO of Systems With Intelligence, and Martin Robinson, Founder and CEO of IRISS.

First, let's get a little background from our panelists. Jon, share your personal background and how you got to where you are from an industry's perspective.

Jon Bucciarelli: Thanks for having me, Alan. Personally, I've been married for 28 years. I have two college-age kids, so I'm enjoying a bit of empty nesting for the first time. Professionally, it took me 25 years to get into the industry. Most people spent 25 years in it. It took me 25 years to get into this power industry. My journey along the way to SD Myers prepared me for this role and the privilege that I have now of building on the legacy of 60 years at SD Myers.

I spent the first 11 years of my career at General Motors, engineering, product launch, launch manager. I spent nine years as an educator and coach at Christian high school where I started a school of engineering and taught juniors and seniors in high school what it was like to become an engineer and what the occupation was going to be like.

I left that to join a startup, a bioplastic company where we turned algae into plastic.

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That company is still going today and participating in the renewal of water and carbon dioxide footprint minimization. I managed an aquaculture fish farm in Jamaica for a couple of years where we were harvesting algae.

I came to SD Myers in 2018 and then was named President in 2021.

Alan Angelo, tell us more about your background?

Angelo Rizzo: I've been very fortunate to have been in the electric power industry. I first started right out of college at a small entrepreneurial company called Multilin, which is still running as part of GE Vernova. I spent the beginning of my career with Multilin doing protection and control products for substations. In 2001, we took a leap of faith and decided to leave GE to start our own company making Ethernet switches.

As young engineers, we really didn't know much about what a startup meant, but we did see the potential for a transition to Ethernet communications being used to digitize substations, and we founded a company called RuggedCom. Ethernet in substations soon took off and RuggedCom became very successful and was later sold to Siemens. After that we saw another potential to provide visualization for substations and that's how Systems With Intelligence got started. It was founded in 2010. I was one of the founders, and now I am the President and CEO. It has been about 15 years, and I am still having a lot of fun doing it.

Alan Thank you, Angelo. Martin, a little bit of your background please?

Martin Robinson: I am an ex-British Army for 17 years, working as combat fleet engineer. I went to work in R&D in automotive, using imaging as a tool to evaluate motors. I fell in love with the

technology and began using that in the service lines and invented and patented a new material for inspection windows that we now use for electric cabinets today, globally.

That is what IRISS is known for, but we do so much for as I fell in love with reliability, a common-sense approach. I fell in love with the technologies used for condition-based monitoring, and it has become my passion. It isn't work if you always do what you love, right?

Alan Exactly, Martin. I think what all three of you have in common as I have gotten to know you is that each of your companies has got a pretty long history serving this industry. The power industry is undergoing more change now than in the previous half century. What are your thoughts on the current state of where we are in industry? Angelo let's start with you.

> The industry is going through a significant amount of change and really starting to look at new initiatives to really help with keeping the grid reliable.
> **Angelo Rizzo**

Angelo I think right now the industry is going through the biggest change it has ever gone through in several ways; the adoption of technology from other industries is being well received within the utilities as it starts to look at different ways of doing things from the old traditional ways, and this is needed to meet the demand that is being put on the grid going through this electrification journey.

Utilities must really start thinking of new ways of doing things and really keeping up with demand. Then there are also the constraints of having supply challenges. They need to keep assets they have running longer. The industry is going through a significant amount of change and really starting to look at new initiatives to help with keeping the grid reliable.

Alan Excellent, Angelo. Thank you. Jon, your thoughts?

Jon As I mentioned earlier, SD Myers has been around for 60 years, and our founder, Stan Myers, was the pioneer in oil processing and reliability of a transformer. Some of the things that we are seeing at our organization is when NFPA 70B moved from a recommendation to a standard, that was very affirming for us. It was what we taught and educated on for many years.

We tend to focus on a group that we call the industrials or the underserved. Those folks tend to have challenges such as long lead times for supply, unreliable power, and massive power consumption which greatly affects them.
I recently heard at one of power shows or forums, that power consumption is going to double by 2035. That puts an even greater emphasis on those underserved customers to have reliable power and to do it safely. We see that change coming or happening at a faster rate than it ever has. The focus on keeping your equipment running is becoming more and more important.

Alan Excellent, thank you Jon. Martin, what do you see going on in the industry?

Martin The chickens have come home to roost, which means we have underserved our industry for years. We have not trained engineers well and we have gotten stuck in legacy practices. We were not innovating. Then COVID hits and it hit everybody massively. Suddenly, it was a big wake-up call.

I had a chat with Jack Nicholas, an industry expert in reliability, years ago. Jack is a well-known figure, one of the true gurus and influencers that we have in our industry. He said, "50 years ago, when the concept of reliability began, I was sitting there thinking, yes, they have finally gotten here. I am sitting here 50 years later, saying 'they still haven't gotten it', because no one was doing anything about it."

The swing to better practices for reliability has taken far too long. I see now, post-COVID, people have realized just how vulnerable before they were to external resources.

We've seen a massive turnaround on what we call resilience. We are looking at building more resilient systems. They are using technology to underpin the skills shortage. In North America, the "silver tsunami" with 10,000 to 12,000 engineers leaving the workforce every day in retirement means we are losing this massive amount of experience. We are seeing an uptick in the use of IoT or machine learning or Gen AI.

We are also seeing an increased requirement for sustainability, for carbon footprint reduction. All these things are pushing us forward. We have

seen in IRISS now, growth in business within the electrical services industry, specifically for these requirements where they're trying to make their systems resilient, trying to make them smarter, and trying to overcome or meet the requirements, stringent requirements, for carbon footprint reduction that are being placed on the industry. It is a wave that we are riding on, and you can give it multiple labels, but it is all moving towards making us better and more accountable every day.

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Alan Excellent. Any thoughts, Jon, Angelo, about what Martin said? Do you align with all of that?

Jon I think the one thing that Martin said that we have seen for many years, being a company that has training and education as an offering, we talk about it as we try to educate customers on the risks and hazards of their electric power system. More and more companies have not invested in this area. The lights came on every day, everything must be fine. They did not have people that were being trained in this. That's not a good recipe for success.

Alan Yeah, just hope and pray, right? Angelo, any thoughts?

Angelo To add to what Martin said, it is also the fact that folks have been retiring, and we have lost that knowledge that they have gained over 30, 40 years of experience. We still deal with some professionals who have 40 years' experience. Utilities must look at innovative and different technologies that can give them that early warning or visibility that they will lose from that experience. The other thing as Jon touched upon is safety. Safety is a big concern, especially as equipment is failing. We have footage that shows how catastrophic it can be when an arrestor blows up; you have shrapnel everywhere and potentially you can endanger someone's life.

Alan Right, and what do you think about that, Martin?

Martin I agree with Angelo. Most industrial facilities have a really well developed, established mechanical program for reliability in maintenance. But in the electrical side of it, we have always been the red-headed stepchild of maintenance. I get fed up with this safety happening by accident. Many times, when my company gets involved in electrical safety programs is when someone has been hurt, and someone is trying to do something, which is great, but I just wish they were more proactive, and we weren't waiting for these accidents.

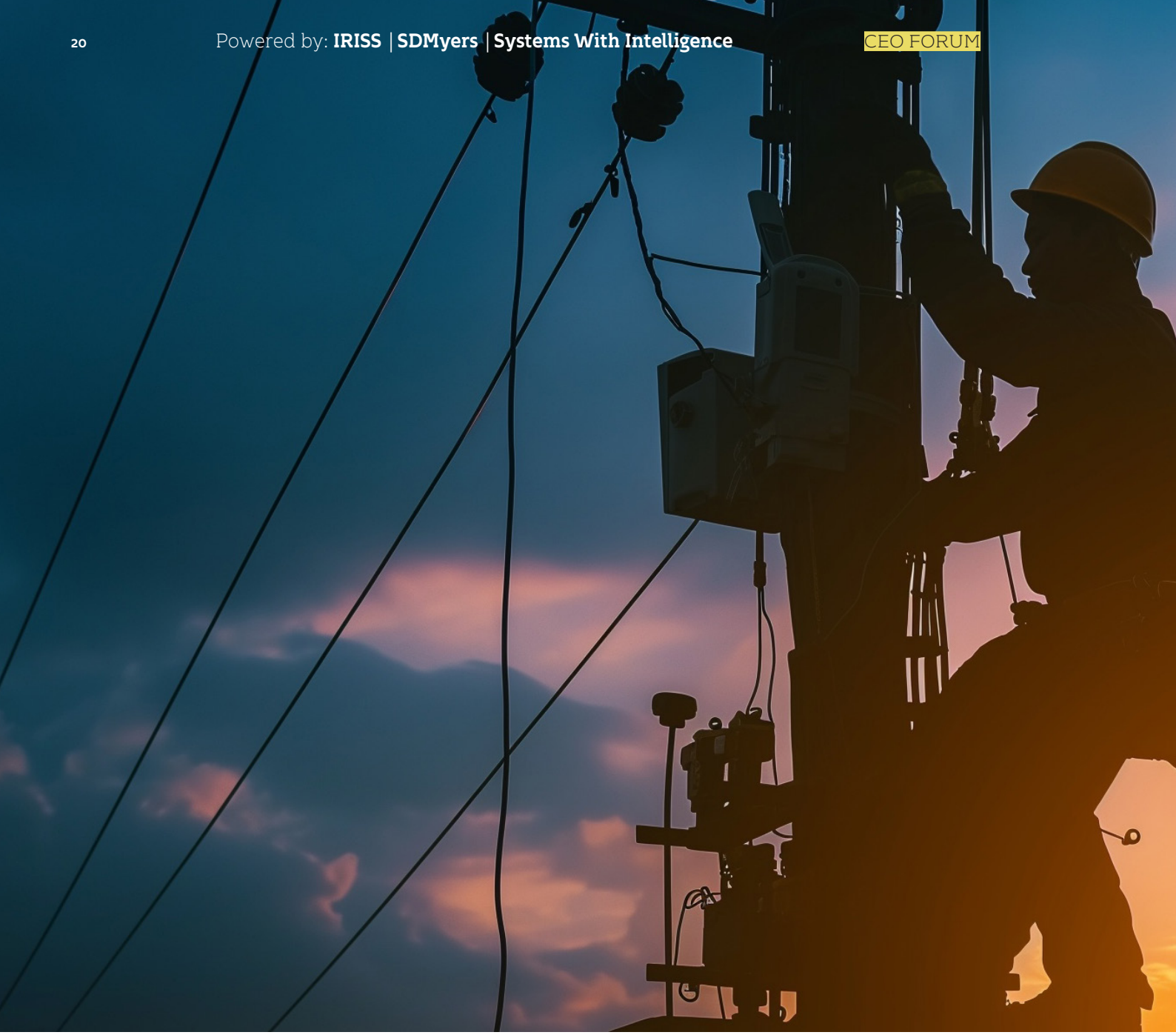
Jon alluded to NFPA 70B, which is becoming a standard. It has gone a long way now to move companies more towards electrical system safety. When you are working among energized equipment, it is much more hazardous than working on the mechanical side.

Most people don't like messing around with electricity. As Jon said, if the light comes on every day, what's the problem? They have a fantastic mechanical system, but if somebody switches off the power, your mechanical system stops running. I think now people are recognizing this. As I say, the major driver for me was the awareness of the lack of resilience in our electrical system, specifically after COVID.

Alan You mentioned 70B, and you mentioned it is now a standard. Does it mean that it has gone from a recommendation to a standard? If you don't follow the standard, can we arrest you? What specifically does it mean for the practitioners out there? Jon, I'm going to start with you on that one, throw you a curveball.

Jon We talked a lot about NFPA 70B, and we have been recommending to our customers for many years that you should do these things. Like Martin said, we are not a company that takes pride in saying, "I told you so", but oftentimes we have the situation where a transformer blows up, somebody didn't listen, and then they come back and say, "Oh, what was it that we should have been doing?" Hopefully, it doesn't include loss of life, but I know in some cases it has.

NFPA 70B in and of itself, being a standard is not really going to change things unless folks adapt



their thinking. Depending on how OSHA begins to choose to enforce the standards that are set will drive and dictate that more so.

> A lot of people choose out of fear as opposed to choosing what is right. We try to educate folks on the risks associated with that.
>
> **Jon Bucciarelli**

Unfortunately, a lot of people choose out of fear as opposed to choosing what is right. We try to educate folks on the risks associated with that. I know in my time at General Motors, we had lots of mechanical failures that lasted 2 hours to 6 hours to 8 hours. But our biggest outage occurred when our electrical substation on the roof blew.

It was a three-day outage. When you are running 1,500 vehicles a day, it was a $20 million a day loss. Those types of implications have huge ramifications to companies. But NFPA 70B becoming a standard now does give it a little bit more legitimacy how will people interpret that? A lot of times they read that and then they just continue with their day. Until there is an incident that happens or some enforcement that occurs, I don't know that it is going to change behavior too much, unfortunately.

Alan Sadly, safety happens by accident. Martin, any thoughts that you have on it becoming a standard?

Martin I sit on the Canadian standards committee for

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Z463, which is the Canadian version of 70B. The main thing is that OSHA can prosecute you for doing a couple of things when it comes to this: first one is failing to supply a safe place of work. If someone is hurt, they would not have been hurt if you were providing a safe place of work. Then the second thing is that they can fine you and prosecute you for failing to comply with a national standard or practice, which is what 70B, 70E were in the early days. Again, if OSHA would just come back and say, "If you do not comply with 70E, 70B, we will prosecute", it would give us far more leverage, in the electrical industries to get what we need to provide safe and efficiently running equipment.

NFPA 70B was developed by industry peers, super experienced, full leaders in every way. They give their time freely to produce these documents. I just wish OSHA could recognize that level of commitment and support them in a way that gives more leverage to what actually a better way of working is. I just wish that OSHA stepped up and supported us by mandating these as requirements from our management teams. Because the C-suite guy is only going to do what he has to do. I wish we could step up and make it easier to understand, easier to comply with, and the language being written in such a way that changes the way things are done.

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>
> **Angelo Rizzo**

Alan Thanks, Martin. Angelo, any thoughts on 70B, 70E?

Angelo Standards are really what is important for driving the safety and reliability and making sure that people take action. Having a good, clear standard for people to follow is important. Again, it comes down to having a reliable grid and putting these things in place is really going to help the industry.

Alan We're asking them to adapt a new way of thinking or a new way of doing. Let me start with you, Martin. When we say, how should industry adapt, talk about how you think they should adapt?

Martin I think one of the primary things I am seeing is the need for building a resilient system. By that, I mean one that is easy to maintain, lowers the cost to maintain, utilizing technologies such as video experience, IoT, Gen AI, to monitor the primary parameters of the equipment.

From my perspective on this, I see that now we are really having to think about design. We call it the DFSR, Designing for Safety and Reliability. When you look at any task, if we can minimize the amount of shutdown maintenance that we do, like cost of monitoring of primary bad actors. We make sure everything's running within the specs that we want, delivering clean, reliable power, 24/7/365.

For me, utopia is having a system that basically manages itself. Why are you going to maintain the system? What does it need to maintain it? I see that as one of the cornerstones of these micro-grids or the grid edge that we build a resilient, almost self-running system that needs minimal intervention to do its job.

Alan Excellent. Jon, your thoughts on that?

Jon One of the requirements of NFPA 70B is for companies to have what's called an EMP or an Electrical Maintenance Program. I think the best way that companies could really improve is to adopt that, not just because NFBA 70B says you should, but we know you should. Not enough resources are committed to this. The education is lacking, talent is leaving, but I think a real commitment is needed to have an electrical maintenance program that provides a safe and reliable system.

I liken it to the idea of CPR training. We go through CPR training, not in hopes that we ever must use it, but just in case. A lot of times, when you think about the money that goes into maintenance of an electrical system, a lot of times folks will look at that as loss if they don't see a benefit for that. But the benefit is that the lights come on every day. Those that are doing reliability well or doing these types of things well don't get any credit. They're the offensive line of the Ohio State Buckeyes. They don't get the credit like the quarterback does.

If you remember one of our tag lines at one of our events was it's all fun and games until it isn't. Sadly, that happens often in both safety and reliability, that we don't put enough effort and resources into this. Like Martin said, one of our ideals here, our ideal state at SD Myers is a system that costs nothing to maintain, no time, and no resources. That's ideal.

But how do we get there? How do we get as close to that? Can we create an electrical maintenance program that spends the least amount of money in the short term to provide the best benefit in the long term? Because we all know that in the end, if you lose a transformer or other component, the cost is enormous. The emergency costs, the generator costs, the loss of production costs are staggering compared to a little bit of prevention. I think that's one of the things that the companies really need to adopt, and we really try to work with industrial customers to do that.

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Alan I do remember one of your clients, Jon, lost a transformer that had problems, and they had not really taken it seriously. When they lost that transformer, it was a $52 million loss. The line was completely lost. Not only do you lose that much money, but a lot of people lost their jobs because of that, for not paying attention to it.

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Jon I share the story often that in our fleet of transformers that we test, the oldest, living transformer that we test every year is 114 years old. I think back to that guy who started that program of taking care of that transformer, he's not getting credit for it, but that transformer is still operational because he has taken care of it for 114 years.

Alan In the maintenance or reliability world, we call "Maintenance Mike" the hero, right? He is the guy that can get in and fix anything. When you have a problem, Maintenance Mike will come in and fix it. But there is a good guy, "Steady Eddie", he is the guy who keeps it from breaking. Maintenance Mike shouldn't be the hero. Steady Eddie should be. It's your offensive line of the Ohio State Buckeyes who just won the national championship last night. I knew you had to get that in there, Jon. Angelo, same question about how should the industry adapt?

Angelo There is a big demand we are starting to see, obviously with AI and renewables, there a lot of data center projects and battery storage projects. You are starting to see more demand on the grid, and ensuring that operators have visibility of what's happening at the edge is key. Utilities will need to start adopting the technology that exists to give them that visibility.
We have heard a number of stories about an individual claiming that they turned off the alarms because everyone was ignoring them, but that visibility, that knowledge of the asset in real-time is critical. Technology is there today to provide it, it's about adopting it and putting it to use.

But when they get into the right hands, to the right people who understand the equipment and understand how severe it could be, then actions can be taken. Working with operators to get them that visibility, that knowledge base of the asset in real-time is critical. Technology is there today. It's about adapting it and putting it to use.

Alan This has been excellent gentlemen, so thank you for your time.

In our next issue we will have part 2 of the CEO Forum, with Angelo, Martin and Jon, focusing on what is ahead for us as an industry? In the meantime, the full CEO Forum is available for viewing through our community hub at www.powersystems.technology/ceoforum.