

Kenneth Peterson

Director of Substations
at LUMA Energy

Interview with **Kenneth Peterson**





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Editor's Note: *At the time LUMA of this interview, conducted at the TechCon North America Conference, Kenneth Peterson was heavily engaged in rebuilding the Puerto Rico grid, after the 2023 hurricane. As of this writing, Hurricane Ernesto made land in early August making it even more difficult for the people of Puerto Rico and of course Kenneth is once again helping rebuild.*

Alan Ross: My guest is Kenneth Peterson. Kenneth Peterson is the Director of Substations at LUMA Energy. Thank you for joining me. You are heavily engaged in rebuilding the grid in Puerto Rico, right?

Keneth Peterson: Yes, we are rebuilding the grid.

AR Kenneth, Puerto Rico has had two hurricanes and flooding? You've got a lot that you're dealing with down there. But I would like to start with something else first. You've been in the industry long enough, and it just seems to be that the pace and scope of change has become much more dramatic since COVID. We're electrifying North America and the world, we're decarbonizing... We got all these things going on. From your perspective, what are the greatest changes you think we're undergoing in the power industry?

KP I'd say two of the biggest challenges are the intense competition for material and labor pool. First, in Puerto Rico, we're doing a very large project on the whole island. We're competing with everybody in North America doing the same thing within the utilities. Beyond that, there is an issue with the labor pool. We're seeing it at LUMA and across the industry as well. It goes back to the interest of keeping the next generation that is coming into the industry.

AR We just talked to a company that makes radiators. When OEMs plan five years out, it makes things easier, but now they're doing a lot of retro work. We have to keep assets, like transformers, alive longer because we can't get new ones, and this issue affects other equipment too. There's also the labor issue. Most people I talk to are "graybeards," and we need to think about bringing up the next generation.

There are two labor challenges. First, at the engineer level, it's not a problem getting the workforce out of college but advancing them to the next level. The 25 to 40-year-olds view work differently than we do. Second, we've abandoned craft work—shop classes are gone, and unions haven't supported it well. We need craft workers to build custom transformers, but we can't find them. Automation isn't

solving this problem, especially in our industry. Field work combines these roles, requiring both supervisor and engineer levels. How are you addressing this challenge, particularly in Puerto Rico?

KP Yes, part of my team is building an internal construction crew to support minor activities as we bring in larger teams from contractors. We're bringing in craft labor from IBEW, and while they're skilled, we're finding a lot of these gentlemen or ladies coming over as craft workers only focus on a certain aspect of things. For example, someone may be great at wiring but lacks experience in rigging or transporting equipment. We're noticing these small gaps as we build.

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To address this, we're developing a new workforce development plan. We have a group of EITs fresh out of university, and we're developing a combination of school in class and then OJT. We have LUMA College for the linemen, and we are also expanding it to include substation training, which we're missing. This will help prepare the long-term LUMA substation technicians and engineers.

We're also modernizing, getting a lot of new technologies like IEC 61850. Here is where the engineer will come and make sure that that process and the standards in those protocols are being met.

It's a lot of moving parts, but it all goes back to making sure we have the right education and experience, and to walk everybody through it so everything lines up, like pieces of a puzzle.

AR You are in Puerto Rico now, you're going to have storms and you have to be thinking about having an almost on-island group to maintain the utility long-term. Is your goal to have a permanent workforce on the island?

KP Yes, the long-term plan involves developing an internal workforce. We will have the college, the laboratory that's going to stay, and the legacy being left behind and the mentorship along the way.

It's not a two-year apprenticeship to come into our substation world in our industry and say you understand everything. Those are long-term goals. We're currently at the five-year stage against that benchmark. We haven't finished getting it developed yet.

AR Let's talk about procurement of transformers. I know you can plan, but actually getting somebody to be making those transformers in a timely fashion and getting them wherever you are, especially on a very mountainous island... it has to be hard, right?

KP Most of it comes out of the port in Jacksonville, US. We have some units that come from South America as well. The key is getting it on the assembly line. Right now, we have a lot of projects in the schedule model, and now it's about getting to the manufacturer. However, until we have a guaranteed slot on the assembly line, it remains a challenge. The time of 24 to 28 months working on some of the smaller mVa transformers, now takes 50 or 52 months, coming from the manufacturer. That's a struggle because we're trying to plan construction around it because we're trying to relocate some of our assets out of some of the known flood zones.

Getting it to a construction sequence and getting it back in play with these long lead times is, yes, it's been a struggle.

AR How do you sleep at night?

KP At IEEE, we had a bunch of CEOs from different utilities. One of them said that the CEO that he used to work for said he sleeps like a baby, and somebody got frustrated with that. He says: Yeah, a baby, waking up every hour, right? Sometimes I wake up with those ideas.

AR I've used that before. Where are you housed? Were you housed in Puerto Rico?

KP I am stationed in Puerto Rico most of the time, on site, and then I come back to the US residence from time to time, but most of my time is in Puerto Rico.

AR How does your wife feel about all this time that you're in Puerto Rico?

KP This assignment worked out with the style of our life. She's usually there about half the time with me, so she's relocated most of the time with me there.

AR Now, LUMA is a joint venture with QUANTA Services.

KP And ADCO which is our Canadian joint venture. We have a little bit of both from leadership. We have some of the ADCO leadership and QUANTA Services leadership, and we're developing internal within Puerto Rico.

AR If I were to say on a scale from 1-10, with one being: *this is the hardest thing, and things are just not working*, to 10: *it's a snap, we'll have this done*, where are you with the project now, given all the challenges rebuilding the grid for the next hurricane and making sure that they don't flood in water?

KP I've been around a lot of the really complex projects within other utilities around North America, and I've also worked with a lot of heavy industrials, so we've seen some real challenges. It's exciting to be able to do what we're doing within the industry at this magnitude but rebuilding an entire grid within a utility to this magnitude of scale, nobody's ever done it.

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When you think about that, you can get overwhelmed. But the number of professionals coming from both parties, the ADCO and QUANTA Services, we have a tremendous amount of knowledge. The challenges are now sequencing our transmission and our substations, just like any other utilities, and long-term project goals.

In my career, it's definitely been the most challenging.

The reliability right now is already increased. It was 35% last year on our reliability scale. That shows it right away. Once we get rid of some of the other outdated equipment which is poor performing, we will continue to reach our reliability goals. And yes, and then getting, of course, the resiliency as a part of that as well.

AR Given the massive power that is coming from storms today, we have that much rain and that much wind, and it is a fast-moving hurricane; when that hurricane comes and decides to sit on the island, a lot of problems happen. Do you think you're making





progress to hurricane proofing or weather proofing the grid in Puerto Rico?

KP I would say it's hard to say we can ever get it so proof from Mother Nature, if you will. We have no idea how the directions and the speeds are going to happen.

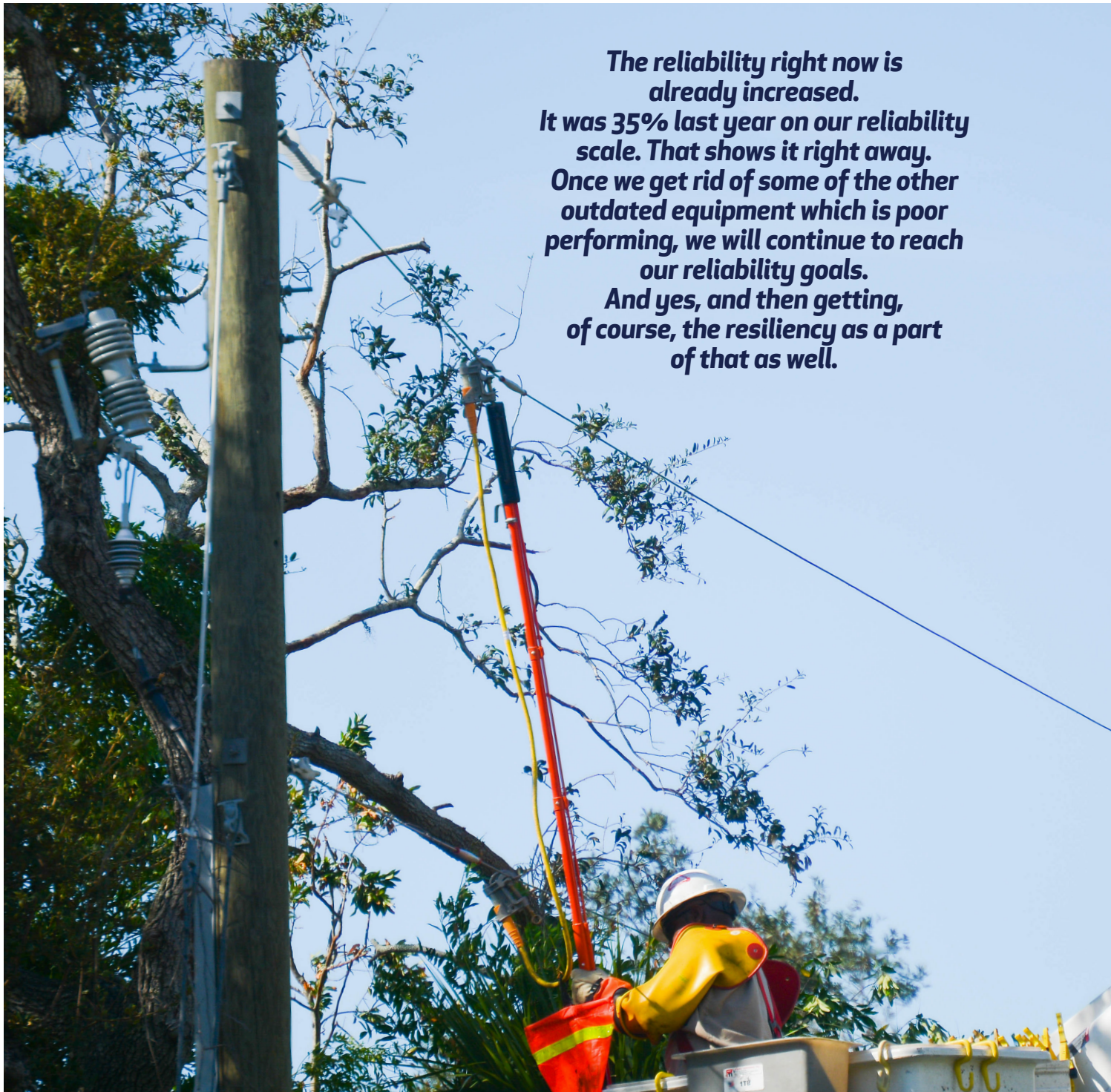
AR You had an earthquake, too.

KP Exactly, and the earthquakes, looking at the scale of where we came from after Maria, obviously the largest to hit in the

modern history in US, and the longest blackout, we have a lot of aspirations for our new goals. We're going to make an impact.

AR There's a lot of unspoken problems with the grid even before Maria. So, you took this issue in the midst of two hurricanes and in the midst of an earthquake. You've done an amazing job for people in Puerto Rico. I appreciate the magnitude of what you had to do, and so well done, and thank you.

KP Thank you so much, Alan.



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