Rachel Johnson (00:17):

Welcome to Co-op Energy Talk. I'm Rachel Johnson, the CEO here at Cherryland Electric Cooperative. And for today's podcast, we're talking about electric reliability. It's something we spend a lot of time thinking about here at cherryland, and there's no one who spends more time thinking about it than my guest today, our Chief Operating Officer, Frank Ker. Thanks for joining me for the podcast today, Frank.

Frank Siepker (00:38):

Thanks, Rachel. Happy to be here.

Rachel Johnson (00:40):

Well, I am sure our listeners will be happy to have you as a guest. Uh, I think it's important before we kind of dive into this topic, to start by saying, when we're talking about reliability in this podcast, we're talking about the reliability of our distribution system. You, uh, will also hear me talk regularly about what I call big G grid reliability, and that's more tied to our ability to generate and transmit electricity over long distances. Uh, the grid system, the big G grid system, has its own reliability challenges, but today we wanna talk about the system we control here at Cherry Land, which is 3,400 miles of poles, lines and system technology that we maintain in order to keep the lights on for our 38,500 members. So, Frank, why don't we, um, start by talking through how Cherryland did for electric reliability in 2023. Uh, we hit a really big milestone, so why don't you tell our listeners about that and what it means for them from a practical perspective.

Frank Siepker (01:32):

Sure. We've been recording outage data in our outage management system. We call it OMS, for about the last 15 years, maybe a little bit longer than that. And this allows us to track and report on our performance. And the trend has been really good. We've been trending down over the course this 15 years 'cause of all the investments and all of the energy that we put into the work that we do to keep our system reliable. This year, for the first time in our recorded history, we met an outage goal of 99.99% availability. So that means that the system is on 99.99% of the time for the average member. And we, we calculate that in a lot of different ways. And, you know, internally we look at outage off or out of time off due to outages. But from a positive perspective, we like to look at it from how often is it available, because it's usually available 99.99% of the time in order to meet that goal.

Frank Siepker (02:29):

Our average outage time for how long the member is out has to be less than 52.8 minutes a year. And this year we came in at 42.8 minutes. So we're well underneath that goal. Um, certainly weather is a contributing factor. The majority of our system is outside and is influenced by weather. But the maintenance that we do, the reliability improvements we make, the technological improvements we make in our system all help drive that down. We look at a five year average as well, allows us to kind of filter out the irregularities that happen with the weather from year to year. And that five-year trend is also trending down nicely.

Rachel Johnson (03:08):

So Frank, I, I do wanna talk at some point about the things we've done to get to that number, but before we do, can you just explain for those, for pe you know, I mean, you and I, we talk about this all the time. So when we hear that we call it four nines or we hear that 42, um, Sadie number, we know what that means. But can you just give a little more detail about how it's actually calculated?

Frank Siepker (03:28):

Yeah. So Sadie is the system average interruption duration index, IEEE. The International Association of Electrical and Electronics Engineers defines this. It allows us to this ability to benchmark between other utilities of different sizes. You know, simply put, if we had a hundred members without power for 120 minutes, that's 12,000 outage minutes, right? We do this in minutes, 12,000 outage minutes. If we divide that 12,000 outage minutes by the number of customers we serve on our system, 38,500 or so, that would be 0.3 Sadie minutes. So three tenths of a minute in Sadie. And if we have a bigger outage, let's say really extreme scenario, we have half of our system out. So half of our 39,000 members are without power for say, a 60 minute outage that would come out to 2.3 million outage minutes. But when we divide that by our 38,500 members, we're back down to a 30, 80 minutes.

Frank Siepker (04:26):

And when we compare now ourselves to, so say another utility, one of the, say the investor owned utilities that may serve 3 million meters in the state of Michigan, we can now take those same outages and run the same equation on 'em and get Sadie minutes that are now comparable. So if they have a 3 million member system and they have a 100 person outage for 120 minutes, that's still 12,000 outage minutes. But when you divide it by 3 million meters, now it's 0.0 0 4 80 minutes. Mm-hmm, <affirmative>. So the average customer had a very short outage because there were so many customers and only a few actually had an outage. But if you take that same 50% out of power outage, so 1.5 million people without power, obviously a very big storm, you take that a hundred and uh, 60 minutes over 1.5 million customers, now you're at 180 million outage minutes.

Frank Siepker (05:17):

So 180 million outage minutes compared to 2.3 million outage minutes doesn't really mean anything to anybody. But when you divide that by their 3 million customers now 30, 80 minutes. So that industry allows us to say, if they're out for 50% of their members are out for one hour, and our 50% of our members are out for one hour, we both have a 30 Sadie minute event. So it's apples to apples compare big utility to small utilities, smaller to smaller, and just gives us that ability to benchmark ourselves and see where we're at comparing to everybody else when we look

Rachel Johnson (05:46):

At. So since we're benchmarking, Frank, tell us, can you, can you give us context, how do others do on this kind of, without calling, I know, I know we're not gonna call anybody out, but like in general, what do the statewide averages look like in Michigan compared to Cherry land's performance?

Frank Siepker (06:00):

Yeah, so in general, the statewide average, and one, one more bit of context. When we talk 80 minutes, we're typically talking about standard forced interruptions, outages related to day-to-day events. Whether it's a squirrel on the line, a tree on the line of carpool accident, you know, the normal day-to-day stuff. Major storms that take out a significant portion of our system at one point in time are generally excluded from these indices. That's IEEE standard. There's no way to benchmark from year to year and from utility, utility when you factor in these major storm events. So again, including major storms, state average for Sadie is about 180 minutes a year. And, uh, we were 42.8 last year. So significantly different. We do things different and we get different results.

Rachel Johnson (06:47):

Well, that's the key takeaway I hope that our listeners get, is that we're, we really are delivering best in state electric reliability right here in the Grand Traverse region to our members. And that's not just us saying that even though we think we're awesome, that is actually us comparing our benchmark data to other, um, utilities across the state. And obviously really excited to get that, uh, first time, at least in our documented history that what we call the four nines or the 99.99% system availability. So let's talk about kind of how behind it we're, we're delivering this best in class reliability. How are we getting that done? What are the, what are the things we are doing to prevent the outages that we can control?

Frank Siepker (07:27):

So a lot of it's everything we do, we do the co-op way, right? We're, we're always thinking about the member at the end of the line. They're our first and our only priority. Um, we're not, we are not trying to please shareholder profits and things of that nature. Certainly affordability is absolutely in our mind, right? Safety, reliability, and affordability are our three key mission statements that we are always focused on. So we take that to heart in everything we do, whether it's tree trimming, you know, we have a six year tree trimming cycle on cherry land system. So every six years we trim 100% of our right-of-ways. So each year we're trimming one sixth of those right-of-ways. Last year we trimmed, based on our model there, we trimmed over 500 miles of distribution lines. So we're re clearing them to a 30 foot wide right of way, trimming essentially from ground to sky, 30 foot wide path, 15 feet either side of the, the pole center line.

Frank Siepker (08:15):

It's not always fully possible to get to the sky, right? We have 70 foot bucket trucks and our tree trimming crews. Michigan trees oftentimes are growing taller than that. But we're trying to create that envelope around the conductors that prevent momentary contacts from, from branches, uh, leaning into the line, uh, or if they're loaded with snow or ice from drooping down into the lines, we're trimming that vegetation from underneath the lines to allow us to access those poles. So when we do have to do maintenance or we do have to respond to an outage, those poles and those wires are accessible to us. And they're also safer by creating these clearance envelopes. We have less likelihood of trees contacting the lines and creating an energized tree. We have less likelihood of children climbing trees and being able to reach energized conductors not a big thing today. I know when I was a kid, we used to climb trees and fall outta trees all the time.

Rachel Johnson (09:04):

There's a lot of things we did when we were kids. They don't let kids do anymore.

Frank Siepker (09:07):

I know. But the rules are, are, are, are based around, you know, all of the above. Right? And the third one that I talked about, clearance underneath the lines, the conductors, in order for them to trip offline and, and become safe again, if they were ever to fall down, they need to contact something that's grounded, such as the ground. So if we have a line that falls down and sits on a bunch of brush underneath an underneath a line, it's not necessarily gonna have the ability to trip out as fast as we would like it to and to become a, a de-energized conductor. So if it gets to the ground, the probability of it tripping off fast and promptly is much better. So we do try to keep that undergrowth vegetation, uh, to a minimum to allow those conductors to reach the ground if they are ever broken down or knocked down by something else.

Frank Siepker (09:51):

So that's our tree trimming program. We spend a lot of money on it. I think we're right around $2 million annually in our tree trimming budget right now. The majority of that goes to that cycle trimming work where we're trimming a sixth of our system every year. Uh, we also do within that we have a danger tree program where we're going looking at every one of those spans that we trim that year for clearance. And we look outside the right of way. So outside of that 30 foot right of way, we look for dead dying weak and leaning danger trees that are going to become a problem and fall into our right of way and take our lines down. And we, we try to manage that as well. So we're, we're trimming those or removing, typically removing or cutting the tops out of those trees that are gonna pose a threat to our primary overhead electric system.

Rachel Johnson (10:35):

We talked a little bit about the cost of these programs and I, I just wanna make it very clear, 'cause I think that this is, I think this happens more than it should. Tree trimmings always the easy thing to cut <laugh>, no pun intended. So when, whenever a utility is, is wanting to shore up their bottom line in a year, the easiest thing to do is to say, well, let's just trim less trees this year. And I'm really proud of the fact that at cherry land, we've not fallen into that trap because at the end of the day, this is one of the big things we do that has a really, really significant and long-term impact on reliability. Because if you, you can get away with not trimming your trees for a year or two, but eventually that bill comes due in the form of a lot more outages for your, the people you serve. And so we're, I'm really, I think it's awesome that we have such an aggressive tree trimming cycle, getting around the system in six years. But also I think we should be very proud of the money that we spend on tree trimming because we know that that is a part of what feeds into these best in class reliability numbers. So anyway, I interrupt you. You keep going with all the things we're doing to Yeah. To get

Frank Siepker (11:36):

To those numbers. Absolutely. And that, that cycle time makes a big difference too. You know, we were over 10 years when I started here 20 years ago, on our cycle time, we've almost cut that in half. So we're there twice as frequently as we were previously. And you know, the trees grow back, right? And the dead danger, weak danger trees, you know, they, every year there's another tree somewhere that dies or there's multiple trees or that become diseased or weak or damaged in the storm pushed over, they're leaning over the line. So we're trying to catch those more frequently. We're gonna be looking, going forward at doing kind of a mid cycle danger tree program too, where we'll go back at three years and look for those particular ones. We, we already started some preliminary pilot work with that this year and went back and inspected some circuits we trimmed three years ago and are doing some budgeting and forecasting for what we think that'll cost us and up with a good plan for how we get that done.

Frank Siepker (12:22):

We did in the last, I don't know, maybe five years, three years, did hire a full-time, uh, right away specialist that's now constantly looking at our system, attending to member driven service tree trimming requests and, and also bird dogging, so to speak, the contract tree trimmers that we have and going and reviewing all of those circuits before they trim them and identifying areas of concern or areas of potentially we need to have more work done or we need to be more cautious. And then also following up and inspecting every single mile that gets trimmed to make sure that it's trimmed to our standards, make sure we've got the clearance we need to make sure that those danger trees have been identified and removed. So that's been a huge benefit as well to make this program more successful and, and, uh, more reliable overall. Can

Rachel Johnson (13:07):

You talk about some of the, um, more like the technology system investments we've made, and I'm thinking here of things like the automation and isolation investments we've made to help us avoid outages where we can and make them impact less people when we can.

Frank Siepker (13:23):

Yeah, so there's two components of that. One is sectionalizing and that's where we look at our system and we try to break it up into smaller pieces with sectionalizing devices, whether it fuses or circuit breakers, reclosers, some kind of a device that will trip, isolate a fault. The more of those we put and the less space we put between them, the smaller the outage is when it happens. So if we can break a circuit that has a thousand people and in half and say, put a recloser in the middle of that, so 500 people are off the substation and 500 people are off that midline recloser, if there's an outage at the end of the line, only the last 500 people have to be without power to clear that fault as opposed to all 1000 of those customers. So every time we can reduce the number of customers involved, we we reduce that the number of outage minutes that are created by those events, thereby reducing our Sadie number.

Frank Siepker (14:10):

So that's a technology thing we, we can certainly do. We fuse all of our radial taps, we install more midline reclosers, more tap reclosers. The reclosers give us an added benefit that they can trip on a momentary fault and re-close back into that line to re-energize it. So if a squirrel contacts a line, they can trip clear the arc, allow the squirrel to all clear and re-energize automatically. It's just programmed into the devices in the field. There's no communications required. It just works that way. They create what we call blinks, uh, when there is a momentary outage, but they reduce the number of permanent outages that we have, which just means more time on the more the power's on the better. Um, so we use quite a few of those. The

Rachel Johnson (14:49):

Second, and I think Frank, it's, it's such an interesting point 'cause I think a lot of people, they get blinks and they will say, oh, you're doing a bad job. Well, the blinks are saving you from an actual outage often, right? Right. 'cause the blink is a part of a system control device that's designed to decrease the frequency of outages. And then the, i the kind of sexualization you piece piece you described allows us to decrease the number of people impacted by any individual event.

Frank Siepker (15:15):

Yes, exactly. If the reclosers didn't create those blanks, what we would have would be a permanent outage. The power would just go out the first time, the power blank. And then we would have to go out, investigate, find the problem, isolate it, repair it, remove it, whatever the case may be, and then re-energize that line. So the duration is, is significant, right? Mm-Hmm. <affirmative>, it's people in the field to go from a permanent outage to a restored outage. But from a, from a momentary outage, recloser can automatically restore that. And, and off we go. Occasionally those outages that the recloser detect are permanent, right? Mm-Hmm. <affirmative>. So then you get a couple blanks, 2, 3, 4 blinks that then become an outage so that when you get multiple blinks and then the power goes out, the recloser was doing its job, just that the fault that was there was not a temporary one. It's something we had to go physically remove and isolate from the system in order to reenergize it just blinks and comes back on. That was an outage saved, right? That

Rachel Johnson (16:05):

Was the outage. It means the squirrel has, uh, self removed the system

Frank Siepker (16:09):

<laugh> Yes. Be the other component, right? Yeah. So the automo automation and, and SCADA supervisory control and data acquisition, the systems we put in place allow us to communicate with these devices. We installed reclosers, electronic reclosers and operate them from the office. So now if we have that scenario where we had a thousand people on a feeder, and suppose now that the outage event occurred in the first half of that feeder, so now the 500 people at the end of the line, they go out with the 500 people at the beginning of the line because there's no way to get power to the end of the line if you don't have the beginning of the line. So now outage it, say pull 10 recloser at, pull 20, everybody's out, right? Right from pole zero. So with, with this remote SCADA control equipment, we can now look at that from the office and we can determine, we know that the fault occurred on their substation recloser.

Frank Siepker (16:59):

We know that the midline recloser has not detected a fault. So we, we, we've identified now where the fault is, it's between the substation and the first recloser. So now we can go into a remote isolation process where the substation recloser is open pole zero, the midline recloser is closed, we can open the midline recloser. Now we've isolated the fault between zero and mid and midline recloser. And that will have a switch that is remote controlled from the office that we can reenergize the second half of the line from what we would call a looped circuit, right? So the, the circuit that comes outta Garfield ties in with a circuit that comes out of timberlee. If we lose part of the Garfield circuit, we'll break it in half, leave the first half out, and then we will backfeed and reenergize the second half of that Garfield circuit from Timberlee by doing this all remotely.

Frank Siepker (17:47):

We can do that within a matter of minutes, uh, from the office as opposed to dispatching field crews and drive time. And, and then, you know, all those, all the extra time that goes with that. So if we had manual switches before, now with automation, we can drive the duration of that outage down faster and faster and faster. And that leads into what we're working on now is automating that process. And that would be a, what we call a flisr scheme fault isolation detection and restoration. So we're gonna, we're gonna find it, we're gonna detect it, isolate it, and then restore it all with a computer system running in the background. So it can be done within a minute instead of within 5, 10, 15, 20 minutes

Rachel Johnson (18:26):

Of having a human review it from the office. Yeah. Correct.

Frank Siepker (18:29):

So we're function testing a lot of that. We have that software in our possession and in operation. Uh, we're learning from it. We're letting it monitor our system. It's, you know, it's reporting solutions to us at this point in time that we can manually implement or tell it to physically automatically implement. Uh, in the future, we'll be able to cut that loose and let it do its own thing and again, continue to drive those outage times down.

Rachel Johnson (18:52):

So it's just amazing. Uh, let me just say, this is all very technical. So I know for a lot of our listeners it's a little hard, but the kind of the, the bottom line here, the takeaway is we've invested in these technologies, and just to be clear, none of them are cheap. Right? We've invested in these technologies on their behalf that allow what would have historically been a thousand people out for let's say four hours. I'm making that number up, but a thousand people out for four hours. We can within a minute limit that to, let's say, 500 people out with some of those technologies you described. So for 500 people, they went from a four hour outage to a five minute outage. The other 500 we know right where it's at now because of the data we're getting back at the office. So we can send a crew out there and get things restored as fast as possible.

Rachel Johnson (19:36):

So we've also given ourselves more access to data to allow us to be more efficient, even when it requires a manual repair. And then, because we're never happy, even though we're the best, we're now looking at ways to use essentially like artificial intelligence and machine learning to, to have the system itself make smart decisions on those things that right now are requiring a human in the office to do. It's super fascinating stuff. Frank, let's talk a little bit. So I mentioned that none of this stuff comes cheap. Let's talk just a little bit about high level. What, what are we investing in our system on a yearly basis? We talked about $2 million for tree trimming. What are some of the other kind high level investments we're making every single year to manage reliability?

Frank Siepker (20:19):

The other, one of the other year to year investments we make is maintenance. You know, we spend somewhere between four and $500,000 a year on just doing maintenance on our plant, trying to avoid future

Rachel Johnson (20:30):

<crosstalk>. Oh, you mean million, you said a hundred thousand, but you meant million, didn't you?

Frank Siepker (20:33):

No, on just on expense maintenance. That's about half

Rachel Johnson (20:36):

A million. Oh, just a, okay. Okay.

Frank Siepker (20:38):

So we're going, we're going pull to pole, right? With a line crew. They're, they're installing animal guards wildlife protection, they're updating fuses if they need to be, you know, they're inspecting all the electrical connections, placing old lightning, arresters, things of that nature. Just your basic preventative maintenance. Right? And that's an expense we do that year in, year out. We're on about a 15 year cycle to get through our system. We've been doing that pretty consistently for the last five to 10 years. So we're probably halfway through our first trip around the system on that. And that really helps all of these equipment related outages, helps reduce blinks, helps reduce animal related outages. Our two biggest cause of outages are trees and wind and animals, right? Small animals. Mm-Hmm, <affirmative>. So we're, we're kind of tackling both of those animals, trees and animals <laugh>, right? With, with maintenance programs, right?

Frank Siepker ([21:25]):

We're trimming trees and we're maintaining the poles and installing wildlife protection. Little clip on plastic guards around the bushings coated jumper wires that try to just provide more space between grounded things, you know, things that are ground potential and things that are at energized potential. Our system operates at 7,200 volts to ground 7,200 volts. Your house is 120 volts. So, you know, 60 times higher voltage on those overhead lines. And if we, if we allow a path to be created by an animal that can touch ground and energize stuff at the same time, it creates a fault. It arcs, it creates an arc, and, and then we have fault current, and then it's gonna trip some kind of a protective device. So we're trying to limit that ability for small animals to be able to make contact with ground and energize things by increasing the distance and by increasing the coatings on those to make them more immune to that.

Frank Siepker ([22:11]):

The other big in investment is what Rachel was keying into here is, is our system improvement program. So our, we called our construction work plan. We're trying to rebuild about 20 miles of our distribution system every year. Replace old poles, replace old wires. Oftentimes we go overhead, underground, whatever it takes to make that piece of line serve the capacity requirements that we have, you know, how much load we need to energy, we need to provide to our customers how much energy they need, but also do it in the most reliable way possible for those conditions. So rebuilding that line, we, you know, we have about 3,400 miles of line in our system. We're rebuilding about 20 miles a year. That's 170 year cycle, right? <laugh>. So it's not the only thing we do. We tackle the worst of the worst with those programs. We also do pole inspection programs.

Frank Siepker ([22:55]):

We test and inspect our poles 10 year cycle on that. We go to every pole every 10 years. And then we replace poles that are reaching the end of their usable life, kind of on a one by one basis. And that allows us to take an old overhead line and extend its life from, you know, 50 or 70 years to a hundred to 150 or more years by individually replacing poles as it become bad. We have thousands of poles in our system that are still 1938 original plant poles that are still passing pole inspections. So it's, it's not an automatic, you have to rebuild the line every 50, 60, 70, 80, whatever, 100 years. There's, there's no, there's no automatic timeline. We base that on condition. Age is a factor, right? When we have a line with a whole bunch of really old poles that we haven't done any replacements on, you know, they're probably all gonna go bad at the same time and it's probably gonna be in a storm.

Frank Siepker ([23:44]):

So we, we do do prioritize those as rebuild projects. So we spend around $3 million a year just on the rebuilding projects, uh, which is a significant investment. And that's, there's, there, there, there are financial costs of that, right? Our rates support that, uh, the rates that our members pay are supporting that $3 million a year is, is not a small investment. We've seen costs of materials and labor and everything that goes into this escalate astronomically in the last three years. Material costs are up 40% over the last three years on average. When we look at all the materials we use, labor costs are up, obviously as the labor markets have grown everywhere and the demand for those materials has made them harder and harder to get. So we're bringing in more inventory in order to be able to provide materials we need for the projects we're trying to complete in a timely manner. So we're paying more, carrying costs, more interest on inventory and on the materials themselves. There's interest costs are up to once we capitalize those projects and finance them for a 30 year depreciation period. So we're paying interest on that. So costs are continuing to go up. We're continuing to look at creative ways to try to keep the costs, the rate pressure on our members as reasonable as possible. But as I said, doing 20 miles a year is still 170 year cycle. We can't really slow that down. A, we can't

Rachel Johnson (24:59):

Slow it down too much. Yeah.

Frank Siepker (25:00):

<laugh>. Uh, because stuff's gonna fall apart before we get to it. And that's just not acceptable.

Rachel Johnson (25:06):

Yeah, it's, it's interesting 'cause I, and you and I've talked a lot about this, but if you go back over the last 10 to 15 years, we know that we've not had quite as much tension between rates and our ability to, to invest in our system because interest rates were really low, inflation was relatively stable and low, and that's no longer the environment we're in. And yet at the same time as we wrestle with this tension between reliability and affordability, we know from our members, they don't want to see sacrifices in reliability. So the key is for us to sharpen our pencils and figure out what can we cut a little that won't have a big impact on reliability. And then figure out how to manage the rate pressures of everything else. Because at the end of the day, we have to keep the lights on. That's our job. So it's not a simple tension like it used to be. So kind of to maybe take us out of what we're doing, what we have been doing and wrap up the podcast as a really technical person, someone who's really keen on technological innovation, as you look into the future, what are the kind of future technologies that you're watching that you think might even further modernize our system or improve our reliability, uh, value for our members?

Frank Siepker (26:14):

I think artificial intelligence is one of the most obvious ones. We piloted an artificial intelligence vegetation management program where it's actually taking satellite images of the trees, doing a near red spectral imagery analysis of that and trying to determine where we have trees that are dying or becoming diseased. So we can try and be proactive and maybe someday we can get away from having a trim on a cycle basis where we're at the same place every six years. Maybe we can get to where this year we're going to the worst places on our system and trimming those. And next year we're gonna go to the worst places on our system and trim those and not have to go span to span to pole, to pole to pole. Because it is expensive and time consuming. It does get us good results, right? We've been proving that over the last 20 years.

Frank Siepker (26:53):

We know that it works, but it's also costly. Uh, treeing costs have increased astronomically in the last few years too. So that's something we've been looking at. We've not found the particular technology that meets our requirements for not missing trees, you know? Mm-hmm. <affirmative>, the, the one that we reviewed, if there was a, a single tree in a span that was likely to be a problem, it was sort of filtering that out as noise. 'cause it, it had to filter noise out somehow and it was missing some stuff.

Continue to look at those, but that's just one example. We will see that on automated intelligence that's looking at all of the fault data that we're getting back. All these electronic reclosers provide us back very granular fault detail, 128 cycles per second. They're bringing back all the fault and current, all these things that we can analyze in the future.

Frank Siepker (27:36):

I think we'll be able to tell in the office when a fault occurs, we'll probably they'll tell what caused a fault. Was it an animal? Was it a tree branch? Was it a conductor slapping another conductor? Was it, you know, a conductor falling on the ground? And be able to have that information just based upon what the system is seeing before we dispatch the crew. So what we kind of know, are we are dealing with a down conductor or are we dealing with an animal outage? Are we dealing with a lightning arrest, lightning strike, or a possibly a blown lightning arrester? The more of that information we can get and process, there's a lot of data there. We can't manually do that. There's just no way. There's too much data, there's too many data points, too many different possible causes. That's something that's gotta be run on a, on a really high power, high energy or automated intelligence system that can do that.

Frank Siepker (28:17):

We're dabbling with automated intelligence on our drone inspection program right now. So it's actually going out. We're flying NMC great partner for us. The local college here has an aviation program with drone technology. We're actually flying our poles with photography. So they're taking say 10 pictures of every pole, bringing that back in. And we're, we've got a company that's training an AI engine based upon the data. They get off these pictures to find problems so that people don't have to sit there and look at the pictures and look for the problems. Or like right now I don't have to send a lineman with two other guys. So three linemen and a bucket truck and a pickup truck to every pole. Set the truck up. Mm-Hmm. <affirmative> put in all the safety gear, go up the pole and look at everything in person. That's very time consuming.

Frank Siepker (28:56):

Very expensive. It works really well. We get great results. But if we can go through and identify all the poles that there's nothing wrong with that we don't have to go to and then go to the polls where we know there's something wrong and fix everything there. That's a big time saver. Big labor saver. Yeah. And we can get more done faster. We can help manage rates. So those are the things we're looking at. I mean, there's a million other possible data analytics, uh, tools out there that I think are gonna be coming down the pipe that'll make this all faster and more efficient. But mm-hmm, <affirmative> the key here for us is faster and more efficient doesn't work if we can't get the quality results.

Rachel Johnson (29:28):

It's gonna be really fascinating to watch it play out. I mean, we're not the only industry being that were change is being driven by more data and the ability to process that data into actionable insights that you can use to improve your business. Right? But we also happen to be one of the lucky businesses where we do have a lot of data <laugh>. And so it's, it's kind of a fun time to be in our industry and watch, watch some of those things change. Well I really appreciate you taking the time Frank, to come and talk to our members about how good of a job we're doing with reliability, but just as importantly about how we're getting that. Because the more they understand how we're getting it, the more they can understand where our costs are, where our money goes. But also when we get, you know, they see, when they see people trimming trees in their neighborhood, I think it's helpful to understand that's part of the way we help to prevent outages. So appreciate you going through all that with us. Do you have any last thoughts for our members on this or We have, we covered everything. We've covered a lot.

Frank Siepker (30:20):

Uh, we've covered a lot. You know, we're never gonna get to no outages, right? Yeah. So, so be patient. Keep that in mind. Everyone's doing everything they can to get there as fast as they can and to get the work done as safely and efficiently as they can when there are outages. Field crews are fantastic. They're incredible bunch of bunch of folks we've got out there that do great work and uh, I know everybody loves to see 'em when they're arriving to, to save the day in an outage. If they're not there right away, it's because they're helping somebody else, right? Yeah. And, uh, we do have a fairly lean team here. Uh, our line department is one of the, the smallest in the, in the world on a per meter basis, right? And our whole operations are, um, and they do fantastic work. They are very efficient, they get their stuff done, but there's only so many to go around. So when we do have the bigger outages, uh, we get a lot of ground to cover with just a few guys. Appreciate the hard work they all put into it.

Rachel Johnson (31:07):

Yeah, and thank you for pointing that out too. 'cause I think that's another thing that may not be immediately obvious. We run a really lean ship and as you pointed out, we have not just line workers per meter, but employees per meter. We're one of the leanest in the country. So here we are delivering best in class reliability with fewer employees. There's a lot of reasons behind that, but part of it is really tied to how hard our employees work and how dedicated they are. And, and then a lot of these other technology investments we put in to help them be as efficient as they can be. So there's so many parts of this reliability narrative that I think we can be proud of. And I, I know I'm, I'm really proud of what we've done as an organization and everybody who's worked hard to get us there.

Rachel Johnson (31:47):

And if you heard nothing else in this podcast today, I hope you remember this, we got to four nines, which is a momentous occasion in the co-op's history. And we're really, really proud of that. And we're gonna keep working to, to maintain that level of reliability for our members. 'cause we know how important it is. Thank you all for, for listening in as we talk through this. It gives Frank and I a ton of joy to talk about nerdy energy stuff. So we appreciate your willingness to, to lend an ear. If you have any questions after the podcast, don't hesitate to reach out to us. You can do so by leaving a comment on the blog or you're also welcome to email me. My email address is r johnson at cherryland electric dot co-op. And I hope you will join me next time for co-op Energy Talk.