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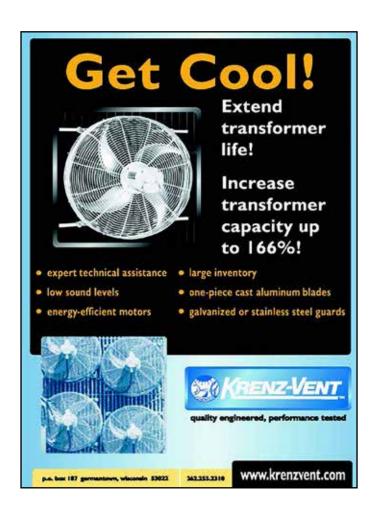






TUS Contents • February 2021

PG 4	FiberTech Outrigger Pads Provide Strong, Rigid Setup in Lighter Weight Package	
PG 6	Disturbance Monitoring Equipment (DME) Retrofit Solution Complies with NERC PRC-002-2 Requirements	
PG 12	Diversified Product Development Launches New RailWise Brand	
PG 14	InnoLIFT XXL Straddle Loader Speeds and Simplifies Deliveries- Now Smaller Vehicles Can Deliver to Facilities With or Without Loading Docks	
PG 16	ALL Crane Invests in 21-Unit Liebherr Package	
PG 22	Monthly Buyer's Guide	
PG 24	Ad Index	



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Hi-Viz yellow, FiberTech Outrigger Pads are non-conductive, waterproof, and chemical resistant. They feature DICA's patented Hi-Viz TuffGrip® Handles to simplify handling. FiberTech 36", 42", and 48" diameter sizes are standard stock products. Other sizes are available upon request.

In addition to applications in construction, crane and rigging, and utility markets, DICA works with engineering departments to develop solutions for custom applications and other site-specific challenges.

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Disturbance Monitoring Equipment (DME) Retrofit Solution Complies with NERC PRC-002-2 Requirements

Advances in Disturbance Monitoring Equipment (DME) provide utilities with an economical retrofit solution to comply with NERC PRC-002-2 requirements

Utilities are facing an upcoming 2022 deadline from the North American Electric Reliability Corporation (NERC) to fully comply with an updated protection and control standard (PRC-002-2) for disturbance monitoring and reporting requirements for transmission and generation systems. The first milestone is 50% compliance by January 1, 2021, followed by 100% compliance by July 1, 2022.

The objective is to be able to standardize regional reliability requirements and requires utilities to install Disturbance Monitoring Equipment (DME). The data collected by this equipment enables NERC to conduct forensic analyses of power failures to detect the causes in order to improve the safety and reliability of power delivery management.

"The NERC standard requires a continuous, high resolution 10 day recording of up to nine measurements per line of per-phase volts and amps, total MW and MVARs, and frequency," says Bryan Gehringer, Senior Application Engineer at NovaTech, provider of the Bitronics meters and IED solutions deployed in over 1200 U.S. utilities. "In addition, disturbances of interest must be archived for three years."

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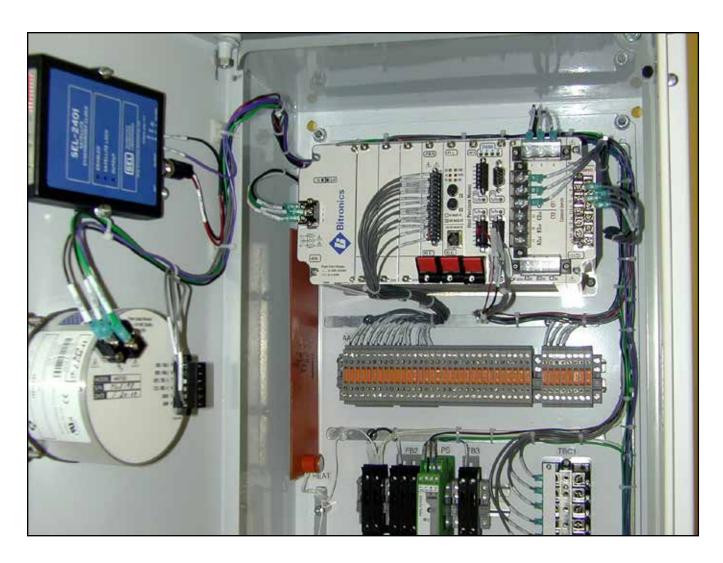
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DME, as defined in the PRC002-02, must monitor Sequence of Events Recording (SER) Fault Recording (FR) and Dynamic Disturbance Recording (DDR) data. SER and Fault Recording functions are already well understood and widely deployed throughout the industry, but the DDR function is relatively new and generally available in more expensive digital fault recorders (DFRs).

Although the majority of 230kV and higher voltage substations are likely already constructed with DFRs, the requirement for DME placement is based on the MVA short-circuit capacity of the bus, and so includes some lines down to 100kV. That is a voltage level where DFRs are not typically part of the original design.

In those locations, it may be necessary to add recording capability to an operational substation

where there may not be room to retrofit a traditional DFR, and where pulling new CT, PT and I/O cables to one location would be a major undertaking.

Traditional microprocessor-based protective relays are also able to perform fault recording, but typically do not have the memory to monitor and store continuous flows of information for 10 days as required by the PRC standard.

"Depending on protective relays to provide DDR data is clunky, expensive and maintenance intensive," says Gehringer. "Even if a utility could stream all the data from the relays to a central computer in real-time, the bandwidth required is massive and the amount of storage space needed would add to the cost," he adds.

Utilities, therefore, have a need for simplified, eco-



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nomical solutions that can be retrofitted into existing substations to ensure compliance with PRC-002-2. According to Gehringer, one solution between relay-based recording and DFRs are small, three-phase single-line devices that can utilize existing CTs and PTs that are already routed to protective relays. The is an attractive retrofit option that is more cost effective than installing full-size DFRs.

These Intelligent Electronic Devices (IEDs) are purpose built for this task and only require the space of a relay. One solution on the market, the 70 Series made by Bitronics, is compliant with NERC standards in SER, FR and DDR recording. Operating at a rate of 30 samples per second, it captures frequency, total watts and VARs and all three phases of volt and phase amps.

One of the specific challenges of the new NERC standard is preserving 10 days of continuous DDR recording data. R8 in the PRC-002 distinguishes continuous DDR recording from triggered DDR recording. Continuous is preferred.

The Bitronics M871 resolves this issue by supporting multiple logical recording functions in each unit. Each logical recorder includes two independent fault recorders, two independent disturbance recorders, a trend recorder, and a SER recorder.

The various logical recorders in the unit can capture data often with a different duration, range and resolution. They can also be triggered by entirely different criteria and can be programmed to operate simultaneously or independently. Because each logical recorder requires a few seconds to convert the data and store it in non-volatile memory, the disturbance recorders are run in alternating hours producing a sequence of COMTRADE (Common format for Transient Data Exchange) files that are each one hour in duration.

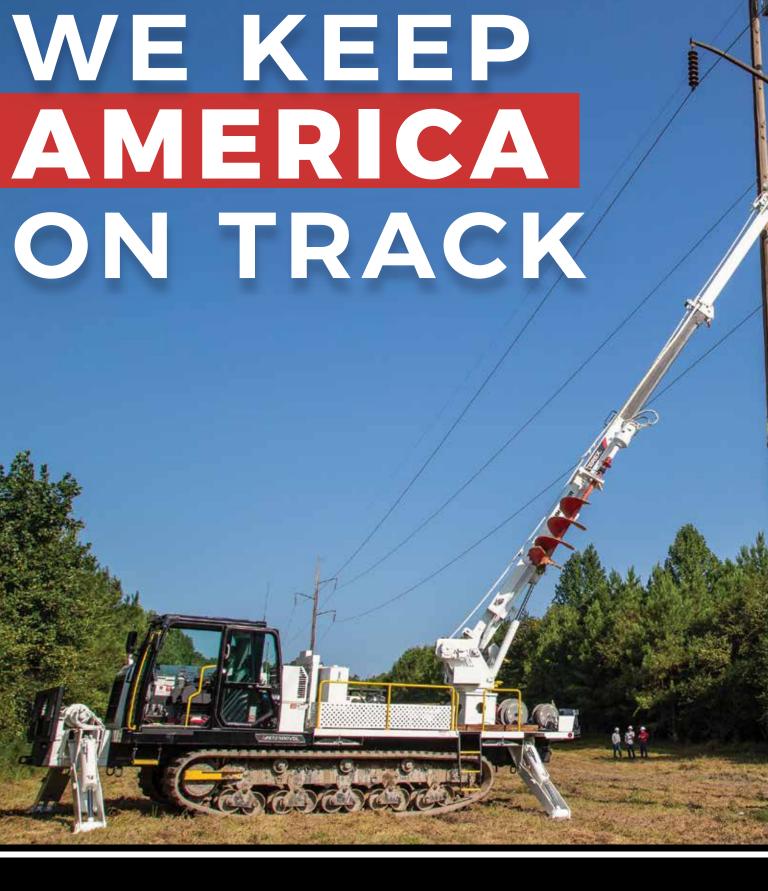
By allocating sufficient memory to store 240 onehour-long COMTRADE files, no data is lost and a circular buffer is created that resides on the M871 with new data overwriting old data after ten days. In other words, the DDR data doesn't need to be streamed in real time across a network to a separate computer. It does not even need to be downloaded, organized, or archived, except when NERC requests the data. At that point, only the data in the range of time NERC requests needs to be downloaded.

In addition to providing all the recorded data required for PRC-002-2, the IEDs are expandable and can also provide additional real-time data to Supervisory Control and Data Acquisition (SCADA) systems with tremendous accuracy. The IEDs can be configured to perform power quality functions not available in a protective relay, thereby effectively operating as a substation SCADA recorder device. In this way, the unit can provide more information on current and power than a power quality meter, which is usually focused mostly on voltage anomalies.

As utilities assess their options for compliance with the NERC standard, the emergence of the IED-based distributed event recording model sits between protective relays and DFRs on the recording spectrum offering better recording capabilities than relays and lower costs and easier deployment than DFRs. For more information on the Bitronics 70 Series and the M871, visit the NovaTech website at www.novatechweb.com/bitronics or call 1-844-668-2832.

www.novatechweb.com/bitronics •







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Diversified Product Development Launches New RailWise Brand

Diversified Product Development has established the RailWise brand to accommodate its growing line of products for the hirail market. The new brand encompasses several of Diversified's existing hirail products and will help clarify the company's focus as it expands its rail industry solutions offering.

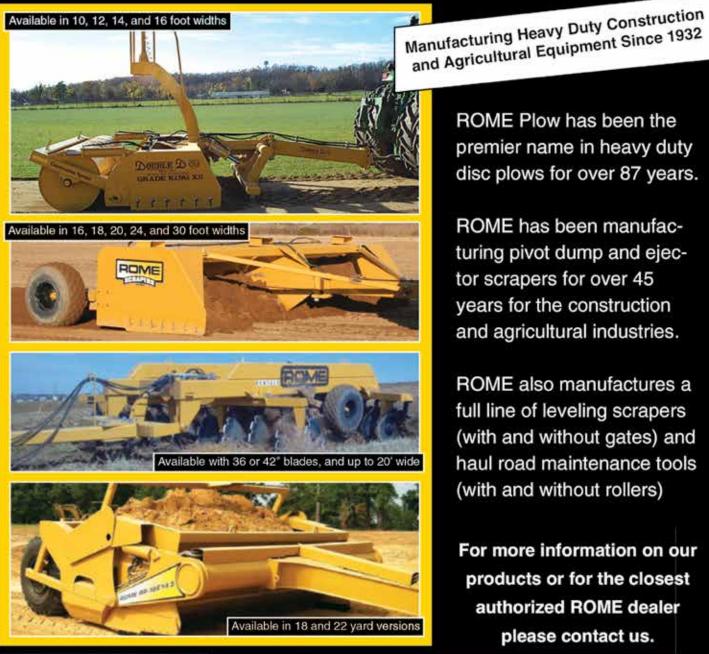
Established hirail maintenance products within the RailWise brand include a platform truck system, a bucket truck system, a rail brake system and a trailer axle system. All of these have been engineered to help make railway maintenance projects more manageable and efficient. Products may be customized to meet customer specifications upon request.

"We believe that the rail industry is growing and specialized equipment is needed to perform exact maintenance tasks more efficiently," said Noah Gutierrez, Director of Sales for Diversified. "We have been engineering specialized equipment solutions for a broad client base since 1996, and it makes sense for us to dedicate the new RailWise brand to help solve some of the unique challenges of this demanding industry."

The RailWise name joins a list of other specialized brands marketed by Diversified Product Development, including the LineWise® brand of lineman tools, the LiftWise® brand of fall-arrest man baskets, and the DesignWise™ brand of fully integrated product design and development services.

For more information, contact Diversified Product Development, 1001 Webster Avenue, Waco, Texas 76706, phone 254-757-1177, fax 254-757-1188, or visit the website at **www.hirail-wise.com** •

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InnoLIFT XXL Straddle Loader Speeds and Simplifies Deliveries- Now Smaller Vehicles Can Deliver to Facilities With or Without Loading Docks

InnoLIFT USA introduces the XXL Straddle Loader which speeds and simplifies pallet-load deliveries. This innovative loader lifts its load and itself into and out of virtually any delivery vehicle, including Mercedes Sprinter, Ford Transit and Ram ProMaster cargo vans, box trucks and semi-trailers. The XXL Straddle Loader allows operators to easily and safely load and unload open and closed bottom pallets weighing to 1100 pounds, with other InnoLIFT models available for heavier weights. One person can deliver materials to a loading dock or a street-level facility, replacing liftgates, ramps, hoists and conventional pallet jacks. InnoLIFT self-lifting loaders are ideal for virtually any last mile delivery need, including food and beverage distributors, colleges, universities and schools, convenience store distributors, paint and building supply dealers, federal, state and local governments, printers, office products and furniture distributors, vending companies, HVAC service companies, auto parts & tire distributors, medical equipment distributors, and more.

The ergonomic design improves delivery efficiency while reducing employee fatigue, workplace injury and employee turnover. It can eliminate the use of conventional pallet jacks for deliveries to facilities without loading docks and eliminates the waiting time for a loading dock to open up - thus speeding the delivery and enhancing overall safety and efficiency. It can also allow the use of smaller delivery vehicles, especially important when delivering to urban environments.



Both manual push and electric-powered walk-behind models are available, all featuring hydraulic lift. All units can be charged en-route in delivery vehicle or in host facility. Unlike exterior-mount forklifts, InnoLIFT rides with the load and is protected from the elements. Easy to operate technology can expand the potential delivery workforce.

InnoLIFTs are easy to operate. First, load the cargo into the van, truck or delivery vehicle. Next pull the support legs out and raise the chassis up electronically. Push the support legs back in and walk the Innolift and cargo into the van. Just secure the load and it's ready to go. Upon arrival at delivery site, the process is simply reversed. A video demonstration is available at https://youtu.be/kWh73MbE7go.

All InnoLIFT USA products are available through local material handling distributors (some territories open) and are backed by a 1-year parts warranty with extended parts warranty and financing also available.

InnoLIFT USA is a division of Frendix USA, which is the exclusive North American distributor for the InnoLIFT and Frendix brands. InnoLIFTs are made in Finland and used throughout the world for ergonomic delivery of a wide range of products. For more information visit www.InnoliftUSA.com, e-mail sales@FrendixUSA.com, call (866) 934-5438, or write InnoLIFT USA, 23300 Mercantile Road, Beachwood, OH 44122.



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ALL Crane Invests in 21-Unit Liebherr Package

Delivery has begun and continues through 2021

ALL is reinvesting heavily in its mobile all-terrain fleet, announcing a massive haul of 21 new cranes from Liebherr that will be delivered throughout 2021. The package includes: four each of LTM 1120-4.1, LTM 1130-5.1, and LTM 1230-5.1; three each of LTM 1160-5.2 and LTM 1450-8.1; and one each of LTM 1110-5.1, LTM 1150-5.3, and LTM 1650-8.1. The most active period of delivery will be the heart of the year, with 16 of the cranes scheduled for delivery in the second and third quarters. The new acquisitions will be distributed throughout ALL's national footprint of three-dozen branches.

Michael L. Liptak, CEO and president of ALL Crane, said the purchase is emblematic of ALL's commitment to maintaining its fleet strength across the company's broad North American footprint. "We approach every package with an eye on customer demand, and what we have is a very expansive and diverse demand for ATs at all capacity levels and in every region," said Liptak. "These LTMs are scheduled for delivery throughout the year and will be ready to roll, supporting each of our yards and the customers they serve."

To that point, three of the units in the package are new models with an array of technologies and performance features designed to serve ALL's wide ranging customer mix and geographies.

The LTM 1120-4.1 offers the maximum lifting capacity (135-ton) and boom length on a 4-axle mobile, delivering performance previously only available on 5-axle cranes. The LTM 1150-5.3, introduced in October of 2020, is a 150-ton machine that offers a 10% longer telescopic boom and 15% higher capacity than its successful predecessor, the LTM 1130-5.1. Last but not least, the capacity leader of this spate of ATs coming

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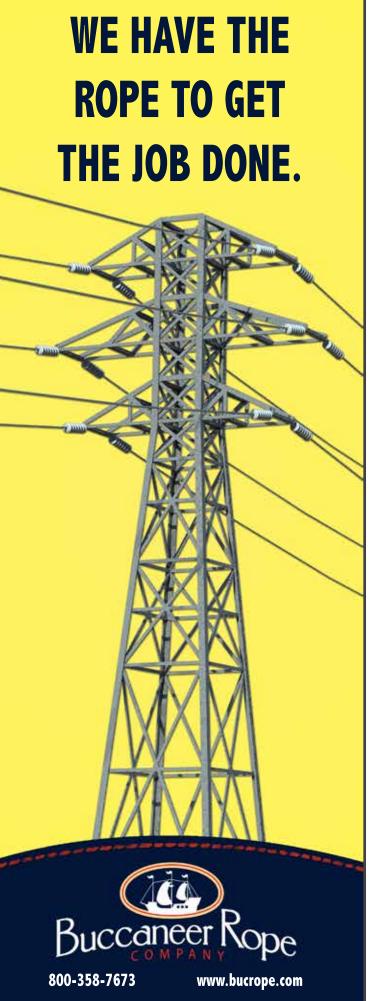
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to ALL's fleet, the LTM 1650-8.1, which made its debut at last year's Bauma trade fair, offers 770-ton capacity, exceeding its predecessor's capacity by between 15 and 50 percent, depending on the equipment package selected.

The purchase—and the new technologies on show—point to the continued popularity of all-terrain (AT) cranes with ALL's customers and in the markets in which they work. "Ongoing growth in road and bridge and general infrastructure engineering and construction are huge, as are expectations for the wind market. These are drivers of the continued demand for ATs," said Liptak. "This purchase also has a lot of cranes with longer booms, which give our customers added flexibility for commercial construction. We're also fortifying our fleet to support growth in new construction and expansion in manufacturing and industrial buildings."

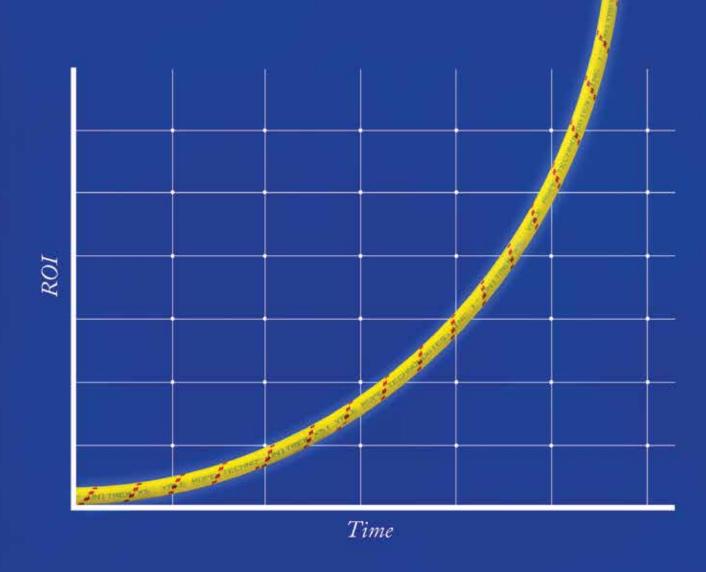
Liptak notes that many of the Liebherr cranes in the package conform to road limits in ALL's major markets, also making them attractive to customers due to the ease of transport. "The mobility of our fleet, project to project, but also branch to branch, is important to us."

ALL is always working with manufacturers, explains Liptak, "sharing information to help create next generation technologies. This purchase further demonstrates our belief in the Liebherr product and our commitment to ensuring customers have the equipment they need, where and when they need it."

About ALL

The ALL Family of Companies is the largest privately held crane rental and sales operation in North America. Their strategically located branches have access to one of the world's largest and most modern fleets, operating under the ALL, ALT, Central, Dawes and Jeffers names. ALL provides rental, sales, service and jobsite analysis, helping to ensure that customers have the right equipment for the job. For more information, contact ALL Erection & Crane Rental at 4700 Acorn Drive, Cleveland, OH 44131. Phone: 216-524-6550. Toll free: 800-232-4100. Fax: 216-642-7633. On the Web: www.allcrane.com

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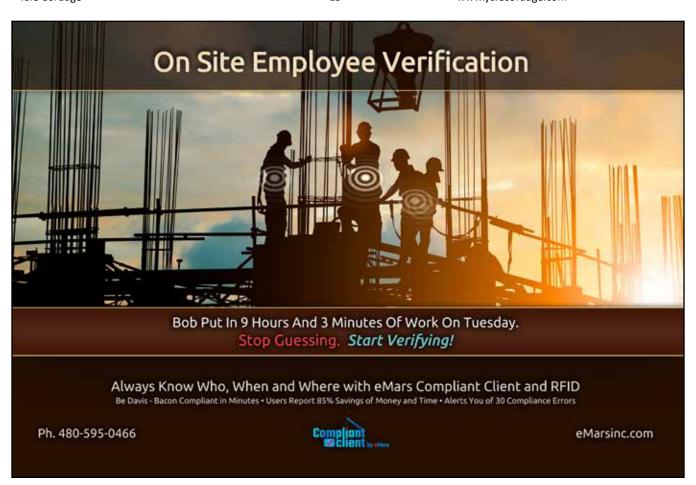


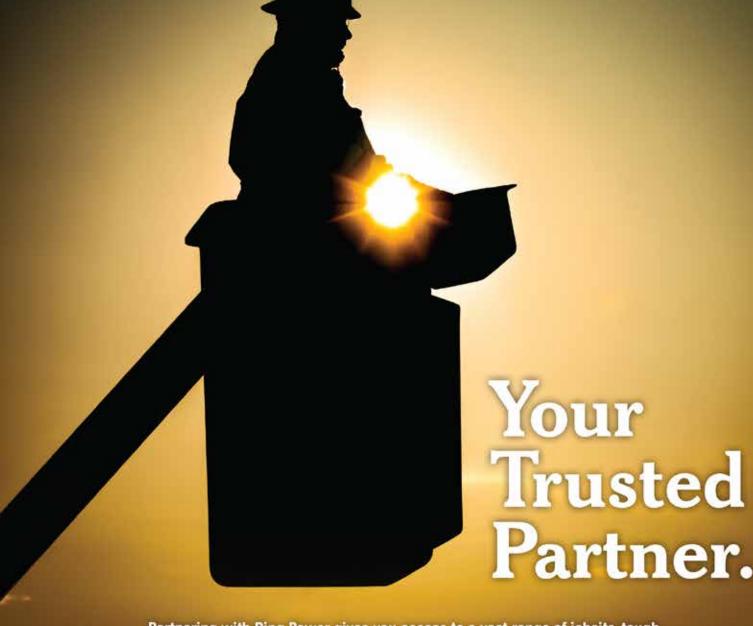




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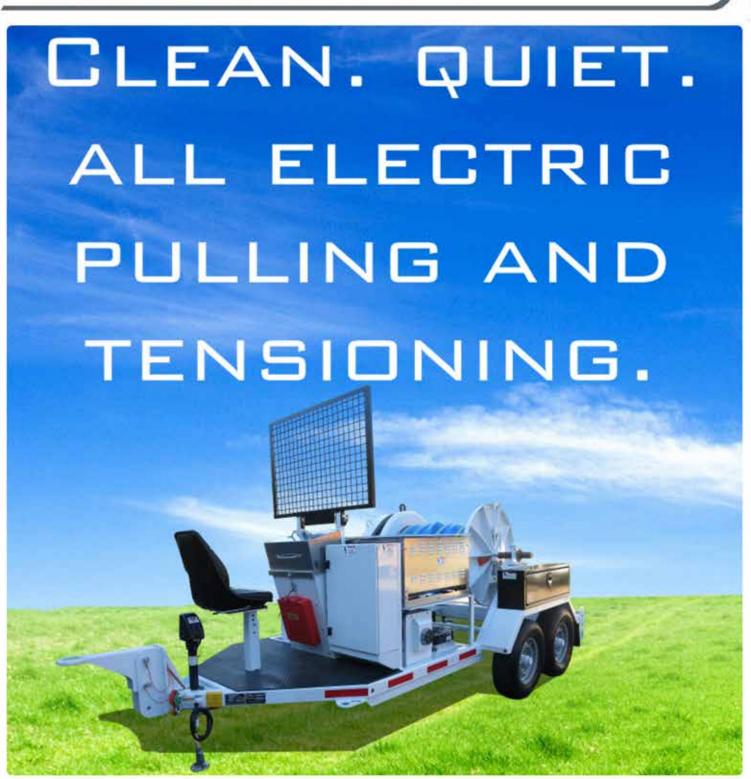








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