

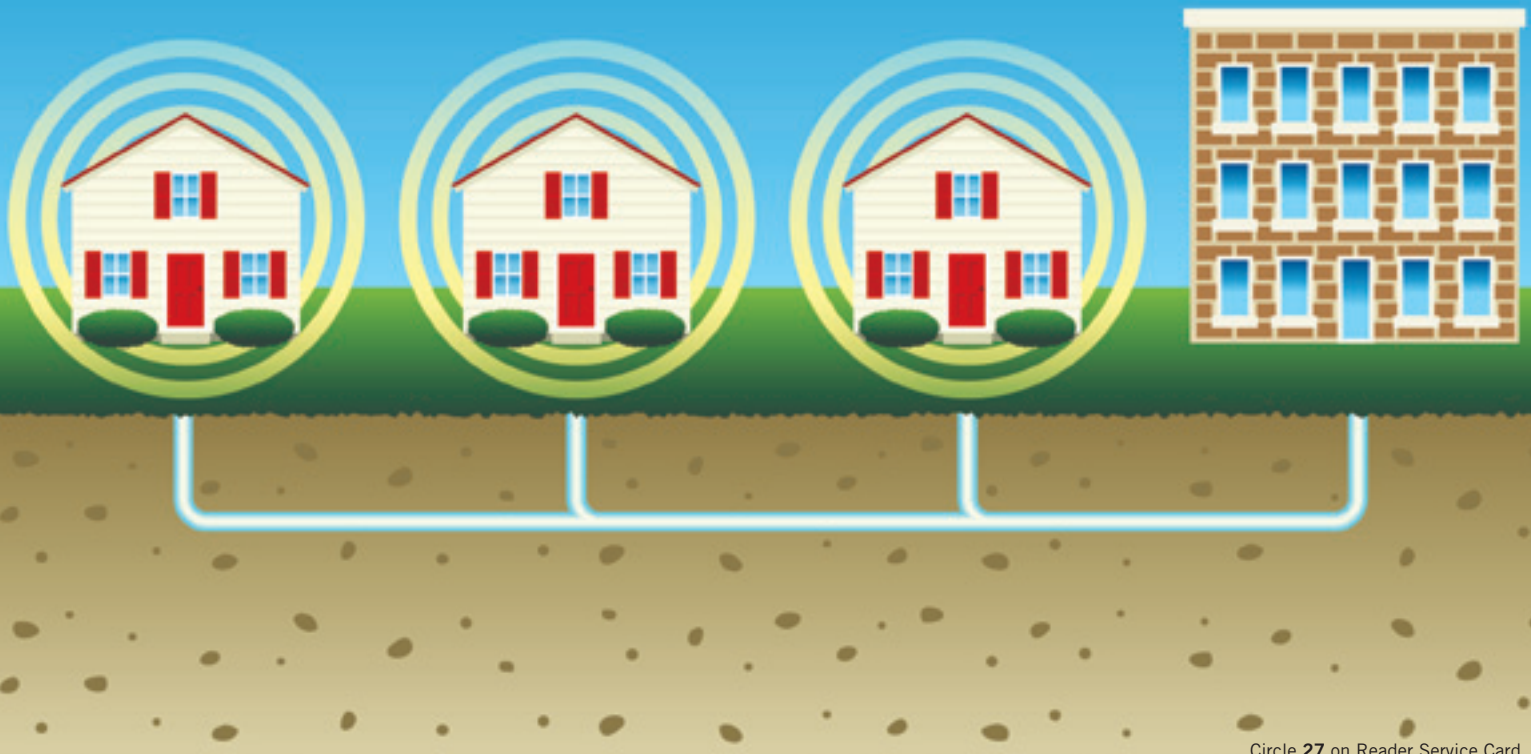


Electric Energy T&D

MAGAZINE

JULY-AUGUST 2011 Issue 5 • Volume 15

KCP&L and Google: A Next Generation Partnership



Circle 27 on Reader Service Card



Transformer Health.

Intelligent Transformer Monitor

- Continuous health check up
- Record vital signs
- Monitor 24/7
- Neoptix fiber optic winding temperature

QUALITROL
Defining Reliability
www.qualitrolcorp.com



Beyond the Great Firewall,

There's a Smarter Grid powered by real-time information and device interoperability. Lurking just outside are the worms, Trojan Horses, 'bots and other insidious tools of the Black Hats looking to exploit and compromise the grid's integrity. How do you provide access to the right people while keeping the bad guys out?



OrionLX

By using the same technologies and IT conventions that keep online commerce and banking secure — Encryption (including HTTPS, SSH, sFTP, and VPN), Firewalls, Strong Passwords, LDAP Remote Authentication and Data Logging — the industry-leading OrionLX Substation Automation Platform creates a Smarter Grid that is both accessible and secure.

Learn more at <http://www.ToolsToGetThere.com>



Orion & Bitronics®



Tools to get there.





OSI

Shaping America's Smart Grid Future™



Open Systems International, Inc. Worldwide supplier of the most reliable, open, modern and scalable SCADA, Energy Management, Distribution Management, Generation Management and Substation Automation Systems to facilitate your **Smart Grid** initiatives.

www.osii.com

© Copyright 2011, Open Systems International, Inc. All rights reserved.

Circle 25 on Reader Service Card



4 GridLines

In my May-June 2011 GridLines column I opened a broad-based discussion about change and whether the changes we're seeing today are – or need to be – evolutionary versus revolutionary.

16 KCP&L and Google – A Next Generation Partnership

Many of us in the utility industry are forward thinkers. Providing a service that is expected to be instantly available through a system, which must last for decades requires some forward thinking.

24 GreenWays Series

In North America, there are big utilities, and there are really big utilities... and then there's Hydro-Québec – the biggest of all as measured by several of the various yardsticks commonly used for such purposes.

34 Lights On

According to recent reports by the International Energy Agency and United States Energy Information Administration, global energy demand is expected to increase approximately 36 percent and U.S. demand is anticipated to grow more than 30 percent by the year 2035.

39 Bigger Picture

Today, most nations of the world have an energy policy of some sort. Reliability and security of supply are typically overarching objectives, even in the most developed and richest of economies.

43 Con Edison and EPRI Collaborate on Manhole Arc Sensing and Recognition Technology

When underground electrical cables age and deteriorate, the corresponding arcing associated with the pre-failure of the cable can be both a hazard and an impending alarm.

47 Security Sessions

Welcome to the latest installment of Security Sessions, a regular feature focused on security-related issues, policies and procedures.

50 Guest Editorial

For many utilities, distribution system vegetation management (VM) programs represent both a substantial portion of annual maintenance spending as well as a major point of contention with customers over the aesthetic impacts resulting from VM.

Publisher:

Steven Desrochers: steven@electricenergyonline.com

Editor in Chief:

Mike Marullo: mam@electricenergyonline.com

Contributing Editors

William T. (Tim) Shaw, PhD, CISSP

tim@electricenergyonline.com

Gregory K. Lawrence, Partner; Cadwalader, Wickersham & Taft LLP

glawrence@mwe.com

Account Executive

Eva Nemeth: eva@electricenergyonline.com

Art Designers:

Anick Langlois: alanglois@jaguar-media.com

Internet Programmers:

Johanne Labonte: jlabonte@jaguar-media.com

Sebastien Knap: sknap@jaguar-media.com

Electric Energy Magazine is published 6 times a year by: Jaguar Media Inc.

1160 Levis, Suite 100,

Terrebonne, QC Canada J6W 5S6

Tel.: 888.332.3749 • Fax: 888.243.4562

E-mail: jaguar@jaguar-media.com

Web: www.electricenergyonline.com

Electric Energy T&D Magazine serves the fields of electric utilities, investor owned, rural and other electric cooperatives, municipal electric utilities, independent power producers, electric contractors, wholesalers and distributors of electric utility equipment, manufacturers, major power consuming industries, consulting engineers, state and federal regulatory agencies and commissions, industry associations, communication companies, oil & gas companies, universities and libraries.

Post Publication mail agreement #40010982

Account #1899244

6 Industry News

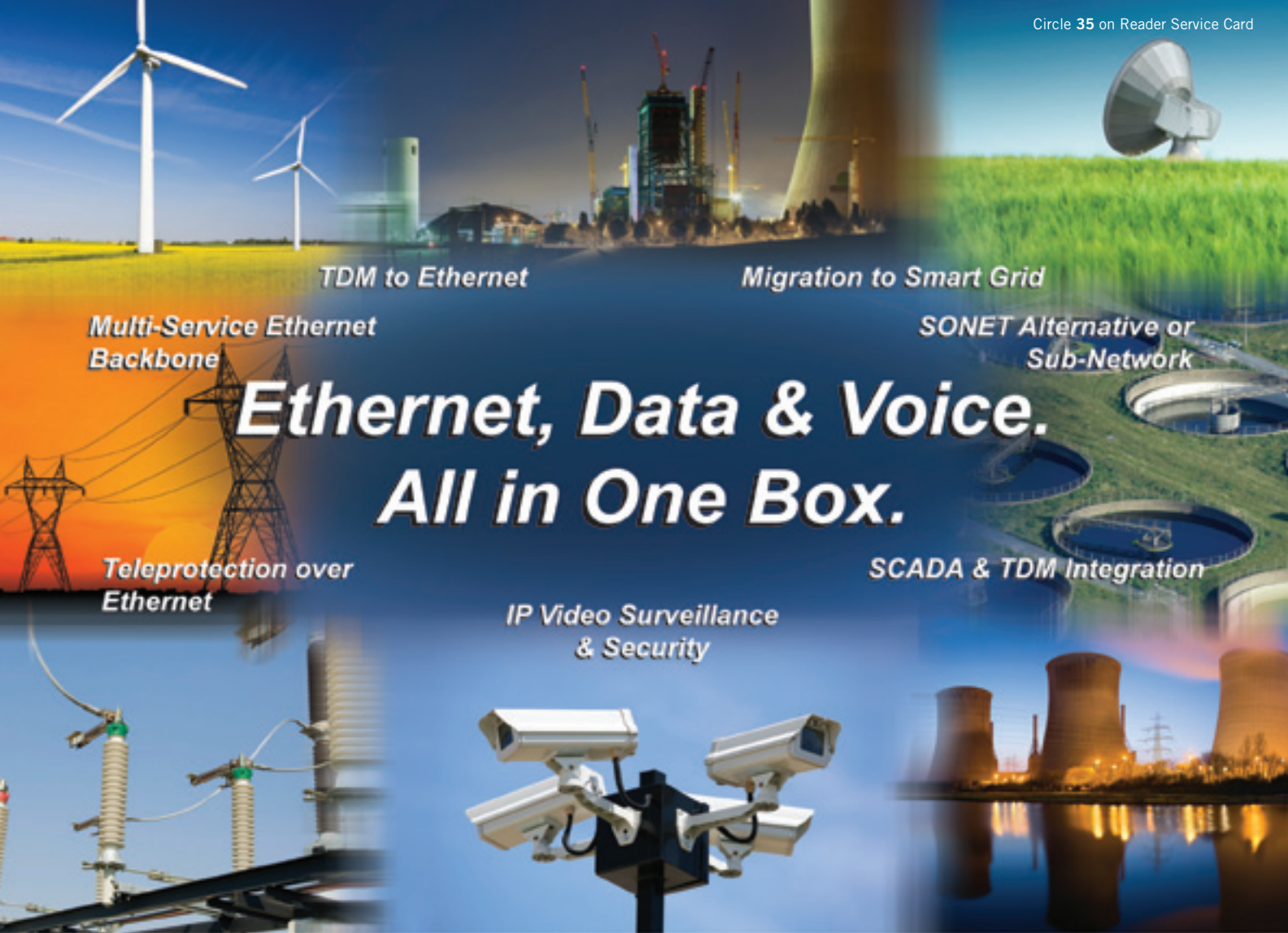
116 Advertisers Index

COVER PAGE IMAGE: iStock Photo



Electric Energy T&D
is proud to be a member
of these associations





TDM to Ethernet

Migration to Smart Grid

Multi-Service Ethernet
Backbone

SONET Alternative or
Sub-Network

Ethernet, Data & Voice. All in One Box.

Teleprotection over
Ethernet

SCADA & TDM Integration

IP Video Surveillance
& Security

Go beyond the limited capabilities of traditional Ethernet Switches.
Think all in one box. Think **JumboSwitch®**

The JumboSwitch integrates 12 modular Ethernet, RS232/485, Teleprotection, T1/E1, T3/E3, Telephone, Analog, Dry Contact & Ethernet-over-PDH interfaces on one rugged Gigabit Ethernet platform.

4 Chassis Options



Learn more. Call or E-mail today for a JumboSwitch WebEx Presentation.

1-888-433-6088 • jsw@tccomm.com • www.jumboswitch.com • www.tccomm.com



Web:
E-Mail: jsw@tccomm.com
www.JumboSwitch.com

Phone:
888-433-6088 (Domestic USA)
+1 (949) 852-1972 (International)





The more things change...

In my May-June 2011 *GridLines* column I opened a broad-based discussion about change and whether the changes we're seeing today are – or need to be – evolutionary versus revolutionary. The fact is, we'll likely see a lot of both no matter what we think. The one thing you can count on, however, is that change will indeed happen. But even given that we will inevitably have change, something that we usually can't know very far in advance is exactly how fast that change will come. And we almost always seem to underestimate how much time change really takes.

Funny, but one thing that always takes me by surprise, even after more than 40 years of close personal observation, is that change rarely, if ever, happens as fast as “they” say it will; as fast as it probably could; or as fast as I think it will – and by the way, I know for sure that I'm usually in good company on that last miscalculation! Let me give you a personal example of what I mean...

When we sold the last SCADA company that I was involved with along with three other partners in 1983, we were on the bleeding edge of RTU (remote terminal unit) technology. Having just introduced the industry's first single-board RTU just a scant 3 ½ years before the company was sold, we had already designed, built and deployed two newer versions that were better, faster and cheaper than anything else on the market – including our own original design. In our minds (and those are key words), the world – meaning our customers and the rest of our target market – had moved on to the latest and greatest, making our original RTU a legacy product that we still supported but didn't try very hard to sell. We were on to the newer – and of course, far more exciting stuff – new models that were just starting to roll off the production line. (Man, we were proud!)

But then, through no fault of our own, the bottom fell out of our main market, which at the time, was pipeline SCADA systems. (Those of you who are old enough will remember 1984, the first time that oil prices dipped below \$10 a barrel – you know, what we now call the Good Old Days!) It wasn't good for our small company, however, since our biggest and most reliable customers just tightened their belts and stopped buying SCADA systems. Needless to say, that put us in quite a lurch since no amount of price-cutting or performance enhancement was going to change the status quo. It soon became obvious that this was way out of our hands.

As luck would have it, a company that had been sizing us up for some time and liked what they saw came forward with a purchase offer that we were hardly in any position to refuse. It wasn't really a bad offer at all, and under the circumstances, it was downright generous. So, we signed the letter of intent and off we sailed, into the sea of due diligence. For those not

familiar with that term, it simply means doing a lot of legal and financial investigation to determine whether things really are indeed as they appear to be. That involved turning the company upside down, ferreting out every record or scrap of paper with something scribbled on it to either prove or disprove what was presumed to be the reality upon which their purchase offer was based.

I'll never forget the words of their CFO when their team of attorneys and accountants descended upon us. He said, “By the time we're done, you'll learn things about your company you never even knew before.” I remember (smugly) thinking to myself: This is OUR company. We built it from scratch. There's nothing you can tell us that we don't already know. Boy, was I wrong! They slogged through mountains of financial records, project files and even our petty cash receipts. At one point they asked what we did with ten sacks of crawfish at \$30/sack. (That was for our annual company Crawfish Boil; something that buyers living 750+ miles from Southeast Louisiana, knew nothing about!) I know this is the long way around, but I'm getting to the point of all this.

When they finally finished looking at all of our records, one part of the results didn't mesh very well with what we'd been telling them. Most of our sales and technical discussions over the many weeks leading up to the due diligence exercise were dominated by our latest and greatest products. It was those products – and their future market potential – that had everything to do with why they wanted to buy us in the first place. Yet when they looked at what was paying the bills, it was almost entirely our earliest products providing the bulk of the income. Hmm, who knew? This was the quintessential ‘can't see the forest for the trees’ problem – and a real eye opener, I might add.

How could this have happened without our knowing it? Easy. It all revolved around being so focused on our next big thing, that we had failed to realize that our customers had only recently reached a point where they felt our earliest products were, well – safe. They'd been through all the sales pitches, the pilots, the factory testing, and if course, the critical field testing – all things that simply can't be rushed. Meanwhile, in our own minds, we were three years down the road; what had come before was ancient history, the way we looked at it. This was truly a teaching moment, and one that I'll never forget.

These days it's easy to get caught up in the hoopla with so many new things happening and so much change all around us. But sometimes it's useful to put the hype aside and focus on reality, because the more things change – almost inevitably – the more some things remain the same. – *Ed.*

The **SAFEST WAY** to **CLIMB** A **STEEL POLE**

**OVER
4 MILLION
LADDERS**
PRODUCED SINCE 1971

WINOLA INDUSTRIAL INC.

Climbing Device Division
www.winolaindustrial.com

RR 1, Box 1070, Factoryville,
PA 18419 • Tel.: 570.378.3808
Fax: 570.378.2597
E-mail: winola@epix.net



**Knurled, Impact
Tested Rungs**



Overhead View

**Step Bolts
Not Aligned**



**NEW!
SAFETY
TIE-OFFS**



**Ladder Pegs
Pegs are Aligned
for Easier Climbing**



**Climbing
Device
for Working**
(steps adjacent)



**Basic
Climbing
Device**
(steps staggered
for climbing)



Weathering Steel

Powder Coated

Galvanized



AEP to Attract Military Veterans Through Troops to Energy Jobs Pilot Program

Columbus, OH - American Electric Power (NYSE: AEP) announced its participation in a pilot effort to link veterans leaving military service to job openings in the energy industry. The new pilot program, called Troops to Energy Jobs, will last approximately two years and will be carried out by AEP and four other U.S. electric utility companies in conjunction with the Center for Energy Workforce Development (CEWD).

The program will establish an ongoing process of outreach, recruitment, career coaching, mentoring, education and training for veterans whose military skills and experience match up with the workforce needs of energy companies.

"Military veterans tend to have the technical training, experience and personal characteristics that make them a great fit for careers in the utility industry," said Robert P. Powers, president of AEP utilities and chairman of CEWD. "This pilot program will provide veterans with a pathway to job opportunities in our industry and allow AEP to continue its commitment to hiring those who have served our country for skilled positions such as power plant operators, chemical and maintenance technicians, and line mechanics."

Nearly 10 percent of AEP's roughly 18,700 employees have served in the military. AEP's military leave policy provides pay differential and benefits for up to two years for reservists and National Guard members who are called to active duty in emergency situations. The company's family military leave policy allows employees to take up to 10 days of leave to spend time with a family member who has been called to or returned

from active duty. AEP has been honored as one of the nation's top 100 "military-friendly" employers by G.I. Jobs magazine for eight consecutive years.

Other companies participating in the Troops to Energy Jobs program are Arizona Public Service Co., Dominion, Pacific Gas and Electric Co. and Southern Co. Troops to Energy Jobs is managed by the CEWD, a non-profit consortium of electric, natural gas and nuclear utilities; their associations (Edison Electric Institute, American Gas Association, Nuclear Energy Institute and National Rural Electric Cooperative Association); and the unions who serve these industries (International Brotherhood of Electrical Workers and Utility Workers Union of America, AFL-CIO.)

Circle 43 on Reader Service Card

PNM Resources' Texas Utility Receives Approval for Smart Meters

Albuquerque, NM - PNM Resources' (NYSE: PNM) transmission and distribution utility in Texas, TNMP, today received regulatory approval to recover the costs of installing an Advanced Metering System throughout its service area.

The unanimous approval by the Public Utility Commission of Texas is based on an agreement reached with all parties that will allow for the recovery of \$113.4 million, including \$66.3 million of capital, through a surcharge during the next 12 years. TNMP will install up to 240,000 meters beginning this year through 2016.

For more information, visit the company's Web site at www.PNMResources.com.

Circle 44 on Reader Service Card

Experience
the Power
of Dow Inside



WHEN IT'S YOUR JOB TO KEEP THE POWER ON.

Keeping the power flowing can mean choosing underground cable made from materials that can handle the forces of nature. That's your job.

With the power of **DOW INSIDE** you can count on reliability and long cable life based on exceptional materials, dedicated R&D, deep industry knowledge, and close working relationships with cable manufacturers and utilities alike. And, with the **DOW ENDURANCE™** family of products from Dow Wire & Cable for MV, HV and EHV cables, you can now specify cables that exceed industry performance standards and are built to last for decades of service.

That's the confidence you need when it's your job to keep the power on.



www.dowinside.com

SDG&E Signs Renewable Contracts for Nearly 200 MW of Green Energy

San Diego, CA - Since January 1, 2011, San Diego Gas & Electric (SDG&E) has added more than 1,200 megawatts (MW) of clean, green energy to its renewable portfolio. On July 8, the utility announced it has signed two more contracts: a 25-year power purchase agreement for 150 megawatts (MW) of solar power with Solar Gen 2 LLC and a one-year contract for 40 MW of geothermal power with Silicon Valley Power.

Solar Gen 2 LLC is a private solar development company based in Greenwich, Conn., with offices in Folsom, California. The 150-MW solar project will be built in three, 50-MW phases at separate sites on fallowed land in the Imperial Valley, California. Delivery of power from the first phase is expected by next summer.

"We continue to add more diversity to the mix of green energy in our renewable portfolio," said James P. Avery, SDG&E's senior vice president of power supply. "This latest solar project will be transmitted across Imperial Irrigation District (IID) transmission network to SDG&E and will get delivered to our customers and the Southern California region using the capacity of the Sunrise Powerlink and the help of the IID. With this agreement, we are broadening our partnership with the IID and helping to benefit the overall economy of the Imperial Valley -- a true win-win all around."

The project will use solar photovoltaic panels with single-axis tracking and is expected to generate about 361 gigawatt-hours per year on average over the length of the contract, which represents nearly 2 percent of SDG&E's renewable portfolio over a full year.

"With SDG&E's development of the Sunrise line, we and other renewable developers can take advantage of the Imperial Valley's vast solar resource to benefit all of California," said Steve Zaminski, chief executive officer of Solar Gen 2. "We are pleased and grateful for the confidence placed in us by both SDG&E and the IID. This

project would not be possible without the leadership and vision of SDG&E's and IID's board and management."

Silicon Valley Power (SVP) is a municipal utility that serves the City of Santa Clara, California. The one-year power contract for 40 MW of electricity generated by underground steam heat is expected to produce about 350 gigawatt-hours of electricity over the length of the agreement, which continues through June 2012. Starting July 1, SDG&E began taking delivery of the geothermal power, which comes from Silicon Valley Power's ownership share of the geothermal units located in the Geysers region of Northern California.

"This contract is an example of the efforts SDG&E is making to comply with the near-term requirements as spelled out in new renewable legislation (SBX1 2)," said Avery. "This contract would add 1 percent to our RPS portfolio in both 2011 and 2012."

"We are excited to be in a position to support SDG&E in their renewable efforts," said Larry Owens, manager of customer services for Silicon Valley Power. "The proceeds from this contract agreement will go directly into investments of new renewable power for our city."

Both contracts require approval by the California Public Utilities Commission. Since January, SDG&E has signed 14 new renewable contracts, for a combined total of 1,225 MW.

[Circle 45 on Reader Service Card](#)

NRECA's Smart Grid Demo Project Finalizes \$13.7 Million in Contracts

Washington, DC - By the end of July, 2011, the National Rural Electric Cooperative Association will close on contracts worth \$13.7 million for smart grid components to be deployed at 23 cooperatives participating in the cooperatives' regional Smart Grid Demonstration Project (SGDP).

Distribution Automation That Fits

SEL offers a wide range of distribution automation solutions to fit every application. From high-speed, peer-to-peer systems to system-wide distribution automation controls, SEL has years of experience improving the performance and reliability of power systems around the world.

- Recloser Control
- Voltage Regulation
- Fault Indication
- Capacitor Control
- Wireless Communication
- Switch Control



Explore our complete solutions for distribution protection, automation, and control at www.selinc.com/DA.

www.selinc.com | +1.509.332.1890



Cool. Tough. Smart.



IP-based networking for your substation should be the easy part. Partnering with GarrettCom makes it simple and rock solid. Rely on our 21 years of expertise and proven Ethernet serial and WAN solutions.

NEW! Ask us about the "Next-Gen" Super Switch

- Substation-hardened, 61850-3
- Reliability and security
- Unparalleled configurability
- IEEE 1588 v2 precision timing
- Dual hot-swap power supplies

With all the things you need to worry about, your network shouldn't be one of them.


GarrettCom
(510) 438-9071
www.garrettcom.com



**The
strongest
link.**

Supported by a matching grant from the U.S. Department of Energy, over the course of the project, participating cooperatives will deploy more than 75 technologies and kinds of equipment in twelve states.

NRECA has made these purchases for research and evaluation of the following smart grid features:

Communications

AMI systems and digital communications software and infrastructure to enable smart grid features including demand response over AMI, load management, prepaid metering and in-home energy displays.

Efficiency and Demand Response

Software and equipment to improve efficiency both at the operational and end-user level, and enable automated demand response and load control. Components include load control switches, in-home displays, advanced Volt-Var control, demand response over AMI, meter disconnect collar sealing kits.

Reliability and power quality

Software and equipment to improve reliability by implementing SCADA, self-healing capability, power quality monitoring and regulation and improved conservation voltage regulation.

Distributed generation and renewable energy

Equipment to assist the integration of renewable energy and distributed generation resources.

NRECA has executed contracts with the following vendors: Cooper Power Systems, Inc., HD Supply Utilities, Ltd., Stuart C. Irby Company, Larson Communications, Inc., RFIP, Inc., Ruggedcom, Inc., and VFP, Inc.

Circle 46 on Reader Service Card

Entergy Helps Grow Electric Vehicle Infrastructure With \$160,000 Grant
Entergy selects Coulomb Technologies to bring charging stations to college campuses

Baton Rouge, LA - Entergy Corporation (NYSE: ETR) announced it is working with Coulomb Technologies to fund and donate 16 electric vehicle charging stations at college campuses in and around Entergy's four-state service area.

The first two Entergy-funded charging stations were unveiled during a special event at Louisiana State University as Entergy and LSU launched one of the state's first major forays into the electric vehicle market. The event featured Dr. Michael Martin, LSU Chancellor; Bill Mohl, president and chief executive officer, Entergy Louisiana, LLC and Entergy Gulf States Louisiana, L.L.C.; and Allan G. Pulsipher, executive director, LSU Center for Energy Studies.

"Electric vehicles are gaining widespread attention and being embraced as an important technology solution for the nation's energy future. We know that the infrastructure must be in place to support the evolution of the technology, and we hope Entergy's donation of EV chargers to LSU will help start that process for the southern region," said Mohl. "This program is part of our deeper commitment to support technologies that foster environmental sustainability and provide for clean, efficient and affordable power for today and tomorrow."

The charging stations were donated to LSU through a \$160,000 grant by Entergy's Environmental Initiatives Fund. Entergy is currently working with other universities in Arkansas, Mississippi, Louisiana and Texas to donate additional electric vehicle charging stations throughout the region.



Reducing SF6 gas emissions is not so hard after all.

Why install SF6-insulated switchgear if you don't have to?

Elastimold® switchgear, from Thomas & Betts, is the only medium-voltage, solid dielectric switchgear to use EPDM rubber insulation and vacuum switching/interruption technology, eliminating the environmental and health concerns related to SF6 gas emissions and by-products.

With a proven 50-year track record for reliable and safe underground distribution systems, **Elastimold®** switchgear is also maintenance-free.

**Elastimold® switchgear -
your sustainable alternative to SF6-insulated
products.**

Contact us for complete product details.
Canada: 800.465.1399 — U.S.: 800.888.0211

www.tnb.com/utility



Elastimold® deadfront pad-mounted switchgear combine the dependability of vacuum load and fault interrupters with the flexibility of modular construction.



Thomas & Betts

INDUSTRY NEWS

"As the state's flagship university, it's fitting that we are the leader in accepting and installing Entergy's gift in the company's four-state service territory," said Martin. "This partnership will go a long way to establishing a cleaner environment and a cleaner way to travel for our citizens."

The LSU charging stations, which are free to use by all LSU faculty, staff and students, are among the first in the nation to be installed on a university campus for the sole purpose of providing free charges to electric car owners and for research purposes.

"Collecting usage data will allow Entergy and LSU to conduct critical research about EV chargers," said Brent Dorsey, director of corporate environmental programs for Entergy. "The goal is to determine the impacts and opportunities of EV charging, including length to charge, consumer charging profiles, time of day for charging, impacts on electric facilities and other consumer behavior and preferences."

The charging stations were manufactured by Coulomb Technologies and are part of Coulomb's ChargePoint® Network, the largest EV

driver network in the world. Coulomb specializes in EV charging systems and operates in 14 countries. The charging station data collection is enabled by the ChargePoint® Network, which provides online access to the data including detailed usage reports, greenhouse gas and gasoline savings. Installation of the charging stations was completed by Verdek, Coulomb's south central regional distributor.

"We are proud to play a part in expanding the ChargePoint Network into the south central region," said Guy Mannino, CEO of Verdek. "As more zero-emission vehicles become available in the region, providing easy and convenient ways to charge is essential for consumer adoption of this new form of transportation."

Entergy's Environmental Initiatives Fund was established as a mechanism to reduce greenhouse gas emissions through innovative, promising projects and is part of the company's ongoing efforts to seek sustainable environmental solutions to its business.

Entergy's online address is www.entergy.com.

Circle 47 on Reader Service Card



Delivering Reliability

888-868-5214
oldcastleprecast.com/Enclosures



Learn more about
Plastibeton Channel
System online.

® This trench won't crack under pressure!

Utilized by Power Companies, Railroad, Transit LRT Systems, Chemical/Oil Refineries, Wireless carriers throughout North America to contain power, control, signal, coax, communication and fibre optic cables. The Plastibeton Channel System is the perfect alternative to duct bank, cable tray or direct buried applications. The Plastibeton Channel System provides containment, protection, and immediate access to cables.

- **H-20 Loading at every point**
- **No grounding required**
- **Lift covers without mechanical equipment**



The LEADING MANUFACTURER of HIGH VOLTAGE - HIGH CURRENT - HIGH POWER TEST SYSTEMS and COMPONENTS

Put the Expertise of Phenix Technologies to Work for You !

ISO 9001
TRIED

35+ Years
Experience



CABLE



GIS



INSULATION



GENERATOR



TRANSFORMER



MOTOR



CIRCUIT
BREAKER



RECLOSER



PROTECTIVE
EQUIPMENT



PORTABLE

...a wide range of test systems available!



AC & DC Hipots
1 kV to 1 MV

Rubber Goods Test Systems



Circuit Breaker & Recloser Test Sets



Resonant Test Systems for On-Site GIL/GIS, Cable,
Transformer Induced Testing



Transformer Test Systems
Distribution or Power



75 Speicher Drive
Accident, MD 21520
USA: +1.301.746.8118
info@phenixtech.com

Switzerland: +41.61.383.2770
info@phenixsystems.com

Taiwan: +886.2.2835.9738
info@phenixasia.com

www.phenixtech.com

Circle 26 on Reader Service Card

Guelph Hydro's "Green" Facility Receives LEED® Certification
Office building is a testament to the company's commitment to sustainability

Guelph, ON - Guelph Hydro is pleased to announce that Phase II of its office on Southgate Drive in Guelph has officially received LEED® (Leadership in Energy and Environmental Design) certification from the Canada Green Building Council. The 3,344 square metre addition built in 2005/2006, features many energy-efficient and sustainable characteristics including a ground-source geo-thermal heating and cooling system, high-efficiency plumbing and lighting, and drought resistant and native species landscaping.

"We are immensely proud of our LEED®-certified office. Not only is it a bright, spacious, and healthy environment for our employees to work in, but it also demonstrates our commitment to sustainable business practices and our leadership in the field of clean, renewable energy," says Barry Chuddy, Chief Executive Officer, Guelph Hydro Inc.

To earn certification, the building was evaluated in areas such as energy and water efficiency, atmospheric gas emissions, indoor environmental quality, and stewardship of natural resources.

Energy and Water Efficiency

As a result of a geo-thermal heating and cooling system, lighting efficiencies, and building envelope design, the building consumes 43 per cent less energy than the minimum requirements for energy efficiency set out in the National Resources Canada Model National Energy Code for Buildings (MNECB).

Water use is 20 per cent lower than LEED® baseline measurements.

Environmentally sustainable features of the LEED®-certified building include:

- A geo-thermal heat pump system uses the ground's natural temperature to provide clean, renewable, heating and cooling for the building

- A building automation system regulates air temperature and humidity thereby enabling more efficient heating, ventilating and air conditioning control
- Timers and motion sensors control building lights
- Skylights and large windows provide natural lighting
- Windows can be opened or closed to enable the flow of fresh air
- High efficiency plumbing fixtures including low-flow faucets and toilets reduce water use
- Designated carpool parking spots as well as bike racks and showers to encourage employees to bike to and from work help reduce fuel consumption and greenhouse gas emissions from personal vehicles
- Drought tolerant and native plant species that eliminate the need for landscape irrigation, excessive fertilization and pest control
- Local and recycled construction materials used throughout the building
- Use of GREENGUARD Indoor Air Quality Certified® office furniture which is 100 per cent biodegradable and/or recyclable and meets strict chemical emissions limits, which contribute to the creation of healthier interiors.
- Use of low volatile organic compound (VOC) paints, coatings and adhesives that improve the indoor air quality of the building
- Heating, ventilation, air conditioning and refrigeration systems that do not use chlorofluorocarbon (CFC) or hydrofluorocarbon-based (HFC) refrigerants

Note: Guelph Hydro recently installed 60 arrays of solar photovoltaic rooftop panels to feed 100 kilowatts of clean, renewable energy into the Ontario electricity grid. The solar power installation was not included in the LEED® application because the LEED® certification process began before the panels were installed.

For more information, visit www.guelphhydroinc.com

Circle 48 on Reader Service Card



The new **PER-005** mandates?
Nothing **NEW** to us.



While many training providers are quickly re-tooling to help users of the Bulk Electric System (BES) comply with NERC standards, General Physics Corporation (GP) is one of the few that's been prepared all along. With more than 40 years of experience serving the energy industry, we've been designing, developing, and delivering operator training programs like those required by PER-005 for decades. Our GPFusion™ solutions are customized to your culture, equipment, and processes. And, of course, we are recognized by NERC as an approved provider of Continuing Education Hours (CEHs). So while PER-005 requirements may be new to some, they're not to us. Let us show you the way.



Test drive our training and earn a **FREE CEH**.
Visit us at www.gpworldwide.com/shop/ceh/.

Enter promo code **ee1101** to redeem your free CEH.
Available to the first 50 people | Only one free CEH per person | Available through 9/15/11



gpfusion.gpworldwide.com
888.843.4784



General Physics Corp. is recognized by the North American Electric Reliability Corporation as a continuing education provider who adheres to NERC Continuing Education Program Criteria.

KCP&L and Google – A Next Generation Partnership

By Steven Gilkey, Senior Director T&D Engineering & Planning,
and William Menge, Smart Grid Director; Kansas City Power & Light.

Many of us in the utility industry are forward thinkers. Providing a service that is expected to be instantly available through a system, which must last for decades, requires some forward thinking. For those new to the industry, take a moment to consider this quote – “The economic health of an electric utility is highly susceptible to changes in economic, social and living patterns of the community. It will be necessary for utilities to take new risks and assume unfamiliar roles in the public arena.” This quote was from the 1969 Power Systems Conference presentation given by J. W. Simpson, president of Westinghouse.



As we fast forward to 2011, our leadership at KCP&L embraces the same spirit. KCP&L strives to improve life in the communities it serves. This goal permeates everything the company and its employees do. So when we were approached by Google to partner with them to help build a newer, faster Internet service, we thought it was another great opportunity to improve life in the communities in which we live and work. This Internet service, called Google Fiber is expected to be available through a system that will be built using KCP&L's existing infrastructure. Google has said Google Fiber will bring ultra high-speed fiber optic Internet service at one gigabit per second to the Kansas City, Mo. After months of positive collaboration and planning, the world now knows about the “Googlization” of Kansas City. Through this unique agreement, KCP&L will provide access to our electrical infrastructure for Google to install its fiber. In turn, Google will be able to offer Internet service at speeds up to 100 times faster than what most people have today.

Embracing the Future

This agreement is not just an agreement between two companies; it opens the door to a multi-path superhighway to the future. You may have seen some recent articles about data overload, latency and buffering frustrations. These are issues

that are becoming commonplace and will only get worse. As systems keep progressing, we need to be able to adapt. For example 3G-to-4G advancement is now mainstream in the telecommunications industry. Similarly, now is Kansas City's chance to embrace this technology and the future of the Internet in one quantum leap. This is exciting for the region and motivating for our communities as we imagine and discover what is possible with this type of Internet service.

Just as in the J. W. Simpson quote previously mentioned, service is about keeping the customer and community satisfied. With this technology, KCP&L will be able to create customer satisfaction plans for tomorrow that address customer issues that haven't yet occurred. In short, we may be able to solve customer problems, before the issue even arises. Today, customers expect instant response and the ability to access information on any topic. Customers have computers, cell phones and automobiles that can send information on thousands of data points. Utilities also seek instant updates on thousands of data points on the transmission and distribution system. How this culminates in useful information we all can benefit from is evolving, but the speed to move and process things in Kansas City is about to change.

GOT BLOCKS?

WE DO!

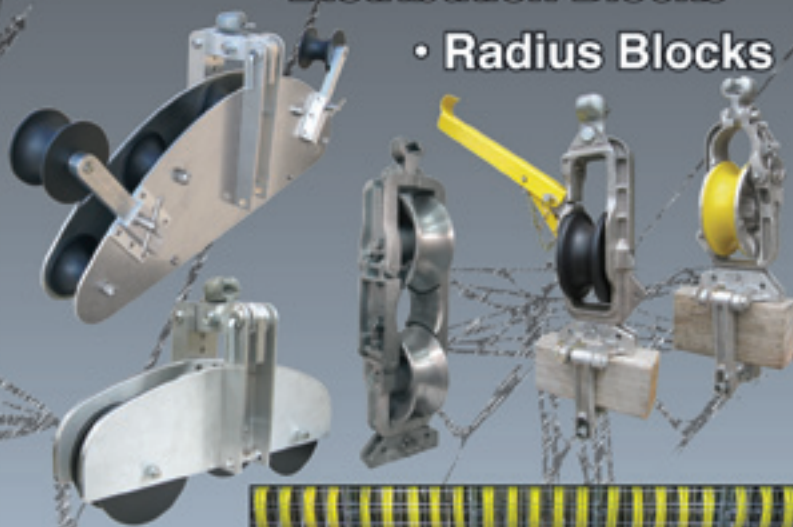


- Transmission Blocks
- Grounded Blocks



**In Stock And Ready For
Immediate Shipment**

- Distribution Blocks
- Radius Blocks



SALES RENTAL REPAIR

PHONE 630-860-5666

WWW.TALLMANEQUIPMENT.COM

TALLMAN EQUIPMENT

A worldwide supplier of tools to the electrical utility industry.



Mike Chesser, Chairman and CEO of KCP&L and Great Plains Energy, and Kansas City, Mo. mayor Sly James exchange congratulations at the Google Fiber project announcement.

Testing Our Limits

In November 2009, KCP&L announced its SmartGrid Demonstration Project. This project is supported by a grant awarded by the Department of Energy (DOE) and matched by KCP&L and its project partners. This initiative encompasses most aspects considered to be part of a smart grid – smart generation, renewables, smart substations, smart distribution, smart buildings and smart customer end-use. The DOE is focusing a good deal of attention on interoperability and refinement of emerging smart grid standards through KCP&L's \$24 million SmartGrid Demonstration grant. As we are building a state-of-the-art system through this grant, KCP&L's partnership with Google has enabled us to expand our horizons even further. The deployment of a distribution management system known in the utility industry today is at our SmartGrid Demonstration Project's beginning, and Google Fiber will allow us to test the limits of real-time system reconfiguration. We have driven our engineers, project architects and vendors to think "outside the box;" this places our thinking "outside the universe."

Today's computers and servers are capable of manipulating and storing high volumes of data. However, these devices can only send and store the amount of data they are able to transmit. In other words, if the infrastructure is not there, the bandwidth is limiting.

This is particularly true of a distribution system; if the size and speed of the infrastructure is behind the times, the information is not up to par. Can you imagine having gigabit speed available to any piece of distribution equipment – new or existing? It is no secret that the speed of fiber communications enables extremely fast fault detection. Having the ability to reconfigure the system and isolate the fault in nanoseconds before a breaker would trip in the first place is a concept we may try testing to see if it is applicable and beneficial to our system and customers.

If you think back to the IBM PC and then consider today's Internet capabilities, mobile computing and wireless communications platforms, open standards have enabled a great deal of successful third-party development. Just a few years ago you could not buy an external computer device and connect it unless you inserted the accompanying CD first. Now your personal computer can recognize devices when they are simply plugged in. Currently, KCP&L's SmartGrid focuses attention on developing industry standards as the utility industry is not yet to the "plug-and-play" world. Google has an understanding of what it takes to do this, and we intend to work with them to help utilities move quickly down this path.

Connecting with Customers

With all of the resources Google possesses, it is able to understand and influence customer behavior like electric utilities and other industries never have. Because of their experience with customer interaction, the ability for KCP&L to brainstorm possibilities with Google is truly exciting. Google is a company that touches millions of customers each second and is continuously finding new and innovative ways to communicate with their customers.

Collaborating with Google on bringing this ultra high-speed Internet service to the Kansas City region may dramatically accelerate KCP&L's ability to educate, outreach and train customers on a variety of products and services. This could all start with our SmartGrid concepts and tools – using a combination of best practices from KCP&L and Google customer communications experience. Gigabit speed to customers will enhance these capabilities for utilities.



HASTINGS

A WORLDWIDE SUPPLIER OF
Hot Line Tools & Equipment

Well Grounded

When it comes to making safe, dependable hot line tools and equipment, we've satisfied tough customers around the world. At home and abroad we remain focused on delivering tools that line crews can really trust.

- **Grounding Clamp.** Perfect for grounding distribution lines, transmission lines, substation equipment, underground systems and industrial circuits. A variety of bronze and aluminum clamps are available that meet ASTM F855 standards for safety.
- **Truck Grounding Reel.** This reel offers a rugged design for long life, easy storage and quick and reliable grounding method for all types of utility vehicles.
- **Grounding Mat.** This mat provides a method for workers to establish an equal potential zone for multiple grounding applications.



770 Cook Road
Hastings, MI 49058-0218

phone: 269.945.9541
fax: 269.945.4623
email: hastings@hfgp.com
www.hfgpgrounding.com

50+
YEARS
1959 - 2011

As an energy provider, we have an obligation to educate our customers on energy use, power creation and distribution as well as up-and-coming technology we see in our SmartGrid Demonstration Project. Educating our customers empowers them to make wiser and more informed decisions about their energy usage. Google is an expert in marketing, and marketing is a focused level of customer education.

Benefits of Bandwidth

KCP&L takes cyber security for our company and our customers seriously. To achieve our SmartGrid Demonstration Project's full benefits, large amounts of data need to be available in multiple arenas that do not exist today. Protecting data from cyber attacks is essential to the success of a smart grid. Once again, partnering with Google could help move us forward more quickly than we could without ultra high-speed Internet service. Google understands the importance of delivering a highly reliable service, and any disruptions in service would affect public image, revenue and customer confidence for Google. Similarly, KCP&L focuses on customer satisfaction and stakeholder confidence in our system reliability and the value of the service we deliver for the price.

Another benefit of gigabit bandwidth is the ability to update software and firmware in field devices. We are all familiar with the cost of rolling a truck to update an intelligent device. Bandwidth continues to be a concern, even with today's modern advanced metering infrastructure (AMI) systems. Even if equipment is capable of updating remotely, we tend to shy away or wait for larger upgrades to avoid "clogging the system" with non-essential data flows. If bandwidth is no longer an issue because of Google Fiber, applying patches should become significantly less of a concern.

Consequently, many of us are still waiting for a real Distribution Management System (DMS). Partnering our utility expertise, including vendors, with the ingenuity and creative horsepower of Google will bring data to system operators' fingertips more quickly than ever envisioned. The possibilities abound: the graphical user interface (GUI) could become a touch screen capable of responding to voice commands; a single operator could perform at the productivity of multiple operators today, with a lower error rate; video chat between an operator and a crew truck becomes a day-to-day business practice.

Gigabit data can enable video monitoring that captures on-the-scene events. Engineers and troubleshooters can quickly place video equipment in service that can be triggered to retain rolling footage after an event. Imagine what could be learned if we are virtually present while an event occurs. This will be valuable for improving system reliability and equipment designs from an asset management perspective.



Missouri Congressman Emanuel Cleaver II thanks KCP&L for its involvement in not only the Google Fiber project, but also for KCP&L's involvement in other innovative initiatives such as its SmartGrid Demonstration Project.

Where will Google Fiber take us? No one is quite sure yet. What we do know is that KCP&L has an opportunity to be a pioneer of this technology, finding uses that will benefit the business and our customers. As the United States was developing, pioneers found a connection point in Kansas City: the Sante Fe Trail, Oregon Trail and California Trail connect here in the heartland. Google Fiber will allow KCP&L to have an Internet service that will unlock countless benefits for the community. Companies will want to move here; our schools, businesses, neighborhoods and individual residents will see the advantages of the ultra-fast broadband technology.

We have a proud history of innovation and "firsts" in our industry, from our landmark carbon offset agreement with the Sierra Club, to our SmartGrid Demonstration Project, to the introduction of all-electric vehicles to our fleet. KCP&L will pioneer into the future with Google Fiber. Just as the move from dial-up to broadband led to new and unpredictable innovations, ultra high-speed bandwidth will push the web to even greater heights – and we couldn't imagine a better place to start than the Kansas City region. ■

Imagine restoring power after an outage... in less time than it takes to read this headline.

It minimizes the extent and duration of power outages. Cuts the cost of electricity delivery. And all but eliminates consumer complaints that always accompany power outages. Rapid restoration is critical. And nothing restores power faster than S&C's total self-healing solution. Our system gives you the ability to restore service in just seconds...automatically.

IntelliTEAM SG™ Automatic Restoration System places intelligence directly in field equipment, allowing decisions to be made where they are most needed. The moment an event occurs, IntelliTEAM SG uses excess capacity from the nearest available source and automatically performs the most efficient switching actions to restore service to as many customers as possible.

Add to this the award-winning IntelliRupter® PulseCloser. It's a high-performance fault interrupter with unique advanced protection capabilities. IntelliRupter dramatically reduces voltage sags and system stress from short circuits on distribution lines.

And, since communications are critical for making self-healing practical, SpeedNet™ Radios offer extremely robust high-speed communication via peer-to-peer networking. S&C's SpeedLINK™ Radio Network Monitoring Software alerts users to potential problems caused by construction and tree growth before these conditions become issues.

Developing innovative solutions. Harnessing local intelligence. Processing in real time to restore power within seconds. And decreasing the conditions that lead to outages. These are the pillars we have used to bring you the fastest restoration solution on the market as well as a flexible distributed intelligence system that will support your Smart Grid requirements of tomorrow.

To learn more about these as well as our other unmatched Smart Grid solutions, visit www.sandc.com/imagine-ee.



S&C ELECTRIC COMPANY
Excellence Through Innovation

ABOUT THE AUTHORS



Steven Gilkey currently holds the position of Senior Director T&D Engineering & Planning at KCP&L. He has responsibility for all engineering functions in the transmission, distribution and substation areas of KCP&L. The delivery capital budget, transmission system operations and SmartGrid strategy also fall under his direction. Mr. Gilkey has been with KCP&L since 2003.

Steven began his utility career in 1985 as an Electrical Engineer at Niagara Mohawk Power Corporation. His industry experience includes engineering, field supervision, operations management, emergency response, merger and acquisition work and has progressed through leadership roles across upstate New York and the Mid-West. Steven earned his Bachelor's Degree in Electrical Engineering from Syracuse University, and a Master's Degree in Business Administration from Rensselaer Polytechnic Institute in Troy, New York. He has recently completed Executive Programs at the Massachusetts Institute of Technology (MIT) Sloan School of Management.



William Menge is KCP&L's SmartGrid director. Key in his present responsibilities is leading a true end-to-end SmartGrid Demonstration Project spanning from smart/renewable generation through advanced automation in the distribution system, advanced metering infrastructure and into customer end-use applications, controls and programs. Prior to SmartGrid, he was Manager of Asset Management and oversaw completion of the T&D infrastructure improvement portfolios under KCP&L's award winning Comprehensive Energy Plan.

William has been with KCP&L since 2006 and possesses 25 years experience in the power industry. His industry experience includes various engineering roles, construction management, construction quality assurance, transmission project management, distribution standards, operations and maintenance program management. William serves on the N.E. Johnson County (KS) Chamber of Commerce Board, the Kansas Smart Corridor Economic Development Board, NERC's Smart Grid Task Force and received a BSEE from Bradley University.

Smart Grid Easy Rider

Scott Stein – Motorcycle enthusiast, swimmer, father, golfer,
Project Management Professional, AMI implementation expert

No matter how tough the smart grid challenge, Enspira's Scott Stein has the road-tested experience utilities count on to cruise through any roadblock without ever slowing down. With two decades of smart grid, telecom and wireless expertise covering every aspect of AMI, MDM and CIS system integration and deployment, Scott is one smart grid expert who's in it for the joy of the ride. From business strategy, to ROI achievement, to hands-on implementation, when it comes to smart meters, Scott is always ready to roll.

Smart Grid – From Concept Through Completion



BLACK & VEATCH
Building a world of difference.



Real People with Inspired Solutions to Real Problems

www.enspiria.com • 303.741.8400

Energy & Utility Enterprise Services

automation/IT strategy, planning & investment guidance

The utility industry is getting smarter fast!

Is YOUR utility getting smarter?

One of the most critical ingredients in the answer to that question is almost certain to involve investments in automation and information technology—and leveraging those investments in new and creative ways. You've probably already made investments in automation—quite possibly sizable ones—and those investments are likely to grow and become even more critical in the future.

Deciding exactly what to do can be a tough call. It means making complex decisions about how, where and when to invest. But besides the financial implications of those investments, you will also be expected to select from an ever-expanding array of hardware, software and communications technologies that are changing daily.

Leveraging automation/IT investments should be a central component of the business plan for every energy/utility enterprise. Creating a successful technology strategy plan (TSP) requires a combination of knowledge, insights, experience and commitment.

With proper automation and information technology strategy planning and investment guidance you can make better decisions, improve operational and financial performance and exercise more effective control over your automation/IT investments than ever before.

automation Insights has a plan that will put your automation/IT investments to work for you in new ways that will save time, conserve resources and make your utility smarter... starting right now.

Learn how by giving us a call today!

1-888-880-0820

www.automationinsights.com

(Outside US & Canada Dial +1-504-885-0808)

inq@automationinsights.com

2011 GreenWays Series

Leadership for a Clean Energy Future

Denis Chartrand



Matt Wakefield



By Denis Chartrand, Chief- Distribution Network Strategies, Hydro-Québec Distribution and Matt Wakefield, Sr. Program Manager-Smart Grid, EPRI.

In North America, there are big utilities, and there are really big utilities... and then there's Hydro-Québec – the biggest of all as measured by several of the various yardsticks commonly used for such purposes. But it isn't just about size at Hydro-Québec; it's also about things like service territory diversity and the enormous amount of research and development needed to support that kind of size and diversity. Our other interview participant, the Electric Power Research Institute, also lays legitimate claim to being pretty innovative itself, creating a real powerhouse (pun intended) of capability. These two industry behemoths – along with a score of other utilities around the world – have put their considerable resources toward creating what could be called the 'Mother of All Smart Grid Demonstration Projects' with its aggressive set of goals and objectives. But read what two noted Smart Grid gurus - Hydro-Québec's Denis Chartrand and EPRI's Matt Wakefield – have to say about this broad based set of Smart Grid initiatives, and judge for yourself... – *Ed*.

EET&D : Matt, since EPRI is the principal architect of the Utility Host Site Demonstration Project Plan it seems appropriate that you kick off this interview by laying out the foundation for this program and its various goals and objectives.

Wakefield : I'll be happy to do that, Mike. Let me start by saying that we're very proud of what we've already been able to accomplish over the past three years in conjunction with what are now – with the recent addition of Hydro-Québec – 21 partners in this global program. The EPRI Smart Grid Demonstration Initiative is a seven-year collaborative research effort focused on design, implementation, and assessment of field demonstrations to address prevalent challenges with

integrating distributed energy resources in grid and market operations to create a "Virtual Power Plant."

EET&D : How often is the Smart Grid Demonstration Program being updated?

Wakefield : EPRI provides periodic updates on these projects and relevant industry news and events in the form of a newsletter, plus three face-to-face meetings per year at different project sites as well as through an annual update.

EET&D : And what is the make up and constituency of the overall Smart Grid initiative as it stands today?

Efacec Advanced Control Systems

Wakefield : Utility Host-Site Demonstrations provide the core foundation of Smart Grid initiatives everywhere. As of now, we have a total of thirteen Hosts collaborating with the 21 utility members, including utilities in France, Ireland and now Canada with Hydro-Québec. The demonstrations are supported by EPRI in design and analysis of key integration technologies and research goals in alignment with project objectives to resolve the information and technology gaps.

EET&D : I think it would be helpful to our readers if you could explain a little more about the difference between a Host Site and a Collaborator and the similarities or differences between them.

Wakefield : All utilities join the initiative as Collaborators. As a utility Collaborator, each has the opportunity to propose a project to be a Host Site that has research goals aligned with the initiative. Although the research we primarily conduct is for Host Site projects, the detailed research results are shared with all the Collaborators. Non-Host Site members benefit from the knowledge gained without the cost of deploying capital intensive projects, Host Sites benefit from research performed specifically for their projects. All of the Collaborators have committed to sharing high-level results with the public to help advance Smart Grid efforts in the industry.

EET&D : I know that EPRI originally created the IntelliGrid architecture to provide a roadmap for utilities to use in their own Smart Grid implementations. Is that being used here, and if so, how?

Wakefield : The EPRI IntelliGrid architecture is being applied to develop use cases and specify the highest priority requirements for communication and control of distributed resources. For each demonstration project implemented, a combination of performance, security, benefits, and/or interoperability assessments are conducted based on data collected through the deployments. The key to this is to use the demonstrations to increase knowledge and define the overall industry needs for integration into the overall system, and to build a consensus on the approaches that work best for integration and industry standards, based on these approaches.

EET&D : Let's move on to the Hydro-Québec Distribution program. Denis, can you give our readers a quick synopsis of how Hydro-Québec fits into the master plan for the demonstration project in Québec?

Chartrand : Sure. Hydro-Québec Distribution's Smart Grid Demonstration project completed the review process and was presented to the EPRI Board of Directors this past April as the 12th large-scale demonstration project. The project includes technologies to improve distribution system reliability and power quality, optimize power flow and distribution system energy efficiency and integrate active customer participation on the distribution system. Distribution automation equipment and Volt and VAR control are already available in the demonstration project. Automatic restoration, automatic fault location and advanced Volt and VAR control will be tested over the next few years.

An advanced metering infrastructure (AMI) and meter data management system (MDMS) will be implemented in the zone to evaluate demand response. The AMI infrastructure also provides a potential source of voltage measurement for advanced distribution applications. A charging infrastructure for electric vehicles is being installed, and vehicle-to-grid technology could potentially be tested as well. To support these distribution system technologies, a WiMax telecommunication system will be added to the existing telephone lines in order to facilitate the required exchange of information.

EET&D : That's quite a broad agenda. How did you decide on the elements of the program?

Chartrand : Hydro-Québec's CEO set out the priorities at the World Energy Congress held in Montréal on September 12-16, 2010. The main elements of that declaration were the support and promotion of renewable energy, the advancement of electric mobility, and creation of truly interactive transmission and distribution systems. These priorities are complementary to the more specific Hydro-Québec Distribution business objectives, such as improving the distribution system performance and efficiency for our customers. Smart Grid technologies are enabling these objectives.



MacLean Power Systems

www.maclepower.com

POWERFUL
SOLUTIONS



TRANSMISSION



SUBSTATION



DISTRIBUTION

Product Families

- Arresters
- Anchors
- Connectors
- Distribution Hardware
- Fiberglass Construction Products
- Fuse Cutouts
- Transmission Hardware
- Safety Products
- Hollow-Core Insulators
- Transmission & Distribution Insulators

including

APEX[™]
INSULATOR SYSTEMS

This is why Hydro-Québec's Distribution Smart grid roadmap integrates distribution systems advanced technologies including VVO, advanced distribution automation, fault location, etc., electric vehicle charging stations deployment and trials and, in a longer term, active customer participation in Distributed Energy Resources and Demand Response. All of these Smart Grid technologies can help us better understand the system behavior. This, in turn, allows us to optimize operational actions and decisions by reducing the traditional safety margins without compromising customer services and workplace safety standards. Optimizing the

voltage within the Canadian voltage standard on the distribution system is a good example of a reduced safety margin that directly contributes by supplying 2 TWh of our overall goal to save 11 TWh in 2015 without compromising customer service or reliability. The remaining energy savings derived from this objective will be accomplished by promoting the efficient, sustainable use of electricity by our customers.

EET&D: What do you see as the major challenges that lie ahead in Smart Grid implementation?

Chartrand: There are four main areas where most of the key chal-

lenges lie. Those are telecommunications infrastructure, information technology, field standardization and the overall management of equipment-grid interaction. The approach to validating Smart Grid technology at Hydro-Québec Distribution involves the creation of a Smart Grid Zone.

EET&D: So what exactly does this Smart Grid Zone entail in terms of facilities and equipment?

Chartrand: As we've already discussed, it includes one substation (Pierre Boucher) and a total of 12 feeders with most sections overhead averaging 10 km. Peak consumption is pegged at about 110 MW with 450 gigawatt hours, annually. There are approximately 13,500 mixed load customers across residential, commercial and industrial accounts. It's also important to remember that this is a permanent installation – not just a preliminary test lab – so we have great expectations for its long-term value as well.

EET&D: Why did you choose the Pierre Boucher substation in Boucherville as the principal site for your project?

Chartrand: There were actually several reasons. First of all, it is a fairly typical substation so it serves as a great location for staging and testing fault location, automatic restoration and advanced protection. It is also a suitable location for our electric vehicle charging stations and quick charge vehicle charging stations. We also have plans for the integration of distributed generation in the form of concentrated solar, all of which will be supported by WiMax wireless communications.

MVA POWER INC.

Your one-stop-shop for Turnkey Detail Design, Manufacture and Supply of Substations, Electrical Equipment, Transmission/Distribution Lines & B.O.M components (both Medium and High Voltage).

- Substation and Busswork
- Steel Towers & Structures
- Cables URD & Bus Ducts
- U/G & A/G Boxes & Pads
- Cable Terminations
- Insulators (Porcelain/Poly)
- Connectors (Subx & T-Line)
- Grounding Materials
- Pole and Transmission Line Hardware, Wires & Cables
- Instrument Transformers
- Power Transformers



- Corona Detection Cameras
- Capacitors & Capacitor Banks
- Disconnect Switches
- Circuit Breakers
- Batteries & Chargers
- HV & MV Switchgear
- Surge Arresters & NGR's
- Protection & Relay Mgmt Sys
- Detail Design & Calculations
- Budget Pricing
- Testing & Commissioning
- Other Equipment & Accessories



CONTACT INFORMATION:
Marc Hadid, P. ENG/ING
1 Holly Road.
Montreal, Quebec,
H3X 3K6, CANADA
Tel: 450-589-0445
Fax: 450-589-0733
Email: info@mva-power.com
www.MVAPOWER.com



Circle 21 on Reader Service Card

Valmont Newmark knows that with the right tools you can solve any problem.

Valmont Newmark—Your one source for steel, concrete, hybrid, transmission, distribution, and substation power delivery structures.

A Broad Structure Offering

It is said that having the right tools is 90% of the job. Valmont Newmark, a leader in the industry, provides the products necessary to meet your specific needs.

Engineering Expertise

In addition to the right products, Valmont Newmark's experienced engineering, dedicated customer service, customer-driven research and development, and reputable know-how in materials technology enable us to provide you the highest quality, most economical solutions that meet our industry's demanding requirements.

Production Capability

14 locations throughout the United States and in Mexico allow us to respond to large scale projects and emergency restoration situations in a timely manner.

Look to Valmont Newmark for a complete product line with the expertise to engineer, manufacture, and deliver the right pole, to the right place, at the right time.



valmont 
NEWMARK

Utility Division, Valmont Industries, Inc.
Two Perimeter Park South, Suite 475 West
Birmingham, Alabama 35243
800-533-5103 • Fax: 205-968-7201
www.valmont-newmark.com



And the fact that IREQ – Hydro-Québec's advanced research and development lab – is nearby is also beneficial on all fronts. Technical innovation on electricity systems is a trademark of Hydro-Québec, and IREQ is participating in the distribution Smart grid demonstration project. This is an example of leveraging the knowledge of all the participants to optimize the use of the available research resources.

Therefore, it afforded us a lot of diversity and flexibility in terms of what we can do in a relatively localized geographical

area. However, there are also other aspects of the project elsewhere in our service territory.

EET&D : Can you give us a few examples of what those other dimensions might be?

Chartrand : Well, another major part of the demonstration environment is the large-scale fiber-optic network that we have in downtown Montréal, which connects underground chambers in this high-density commercial zone. This provides the backdrop for remote

monitoring of the grid, remote maintenance and telecommunications with the intelligent underground chambers.

EET&D : Matt, perhaps you could jump in here and describe some of the anticipated benefits of the Smart Grid Demonstration Model and how those benefits manifest themselves.

Wakefield : There are four primary areas where we think tangible benefits can be derived. The first of these is expertise. That is, it serves as a real-world opportunity to gain experience and a feel for how Smart Grid technologies can be applied to monitoring, information and control with telecom and centralized control and integration with various existing systems. It also provides an opportunity to test the characteristics of multiple Smart Grid applications operating in parallel. Second, it delves into risk management, providing invaluable lessons learned from the testing of new applications and the ability to identify potential problems before large-scale deployment. Third, the energy conservation component gives us the ability to quantify actual reductions in energy consumption, providing the ability to analyze actual greenhouse gas reduction as an integral part of the model. And lastly, this knowledge is shared with the industry as a means of identifying gaps where future research is needed.

EET&D : What is the approximate time line for all of this to take place?

Chartrand : It's essentially a 5-year plan, although some activities have been under way to various extents over much longer periods of time.

**The *NEW!* BNT Nonmetallic Cable Support
For Power Manholes And Vaults**

**UNDERGROUND DEVICES BNT
NONMETALLIC CABLE SUPPORTS:**

- High Load Capacity
- Can be Used With Existing Steel or New Nonmetallic Stanchions
- Will Not Rust or Corrode
- Insulators Are Not Required
- Excellent Dielectric Properties
- Multiple Arm and Stanchion Lengths Available
- Molded from UL Listed Glass Reinforced Polymer

 **UNDERGROUND DEVICES
INCORPORATED**
3304 COMMERCIAL AVENUE • NORTHBROOK, ILLINOIS 60062
Phone: (847) 205-9000 • Fax: (847) 205-9004
Website: <http://www.udevices.com>

Circle 37 on Reader Service Card



UTILIMETRICS

The Utility Technology Association

September 25-28

Autovation

The Smart Utility Conference & Exposition

2011

Gaylord National Resort
and Conference Center

SEE YOU IN
DC

This is ONE Conference not to be missed!

Experience the premier conference for Smart Utilities

Attend Autovation 2011 for:

- Practical business solutions
- Real-world education
- The latest innovative technologies
- The leading manufacturers and services
- Numerous networking opportunities

**Utilimetrics has assisted utility professionals improve
metering operations for nearly 25 years.**

For more information on Autovation 2011, visit autovation.org, or call +1.847.480.9628



For example, the remote control distribution automation program was authorized in July 2005, and the underground automation program was initiated even earlier. This year we're moving on to CATVAR (Distribution System Voltage Regulation and Reactive Power Control), remote meter reading and the beginnings of our electric vehicle plug-in stations. Then, between 2012 and 2015, we'll be adding several more features including, automatic restoration, Volt-VAR optimization, advanced load control, and ultimately, concentrated solar by the end of the cycle.

Wakefield : It's also important to note that as this project goes forward there are also other implications for the various internal departments and technological disciplines as well as customer engagement. In general, as the plan progresses, customer involvement escalates fairly substantially and more strain is placed on the transmission system – which in turn has an impact on system performance. Moreover, the subsequent stress placed on the utility's telecommunications and information technology infrastructures will make those resources increasingly important to monitor closely too. Denis, perhaps you'd like to comment on that as well?

Chartrand : Yes, let me just add that because our end goal is to have a fully optimized real-time grid configuration in place by 2020, there will clearly be a need for changes and adjustments as the learning curve builds over time. Virtually every department will be affected to some degree.

EET&D : Before we close, I'd like to briefly touch on what else is happening with respect to the remaining areas you talked about earlier; namely the telecommunications piece, the CATVAR/VVO applications, your electric vehicle recharging plan, AMI and related metering initiatives, renewable energy integration and some of the more advanced future plans for the Smart Grid Zone.

Chartrand : As mentioned before, our roadmap focus on distribution system applications such as advanced distribution automation combined with fault location, which is something we expect will improve our SAIDI numbers. And, with improved VVO we can further enhance distribution system efficiency. We are also deploying the EV recharging station infrastructure. As you know, we just announced our selection of Landis+Gyr for metering, so now things will start moving along rather quickly in that area. This year we will implement those smart meters in several areas of the province, including in our Smart Grid

Zone, to test the technology. And, the WiMax telecommunication infrastructure required to support the information exchange will begin initial testing and evaluation this year at our IREQ lab.

EET&D : Any other plans for the future?

Chartrand : Over the next few years, demand response will be tried out in the Smart Grid demonstration project to evaluate the opportunity and benefits for our customers as well as for Hydro-Québec. Likewise, the new meters will create opportunities to provide information for advanced distribution applications such as VVO, which will be tested as we go forward. Our renewable energy initiative involves distributed generation and renewables integration through calls for tenders for power to be installed all over the Province of Québec.

We are also planning to enhance our monitoring with smart meters for profiling and forecasting loads (including the new EV loads) and vastly improved Smart Grid based protection and control strategies, eventually integrating DG into DMS for participation in those applications. We are also planning for utility-scale energy storage at one or more yet-to-be-determined substation locations and at EV plug-in terminals. Various other V2G initiatives to help support a viable electric vehicle rollout are also under consideration.

EET&D : Denis, I'll leave the last word to you to sum all up. It certainly sounds like your Smart Grid deployments will be both diverse and comprehensive, making for a very interesting period of learning over the next several years.

Chartrand : Yes, that's absolutely correct. It includes elements of smart distribution systems – initially as individual applications and later as integrated systems, including transmission – and charging station infrastructure for EVs, as well as AMI and telecommunications infrastructure. In particular, the Distribution Smart Grid Zone is a key element to meeting many of the Smart Grid challenges that lie ahead, not only on the power engineering side, but also regarding telecommunications, IT integration, Smart Grid standards, and the validation and integration of Smart Grid technologies and applications. With so much happening – not just with our project but for the entire global initiative – the future should be quite exciting and interesting indeed! ■



When you harness the power of knowledge, you unleash the possibilities.



The industry's knowledge leader is your trusted partner.

For over 90 years, Doble has partnered with our utility clients to improve operations and optimize system performance. Through the dedication of world-class staff, Doble provides products and services in 110 countries around the globe, delivering the solutions you need – from diagnostic testing equipment to hands-on, technical training seminars. It's a relationship we value and a partnership that will allow us take the industry to the next level. Together.

Doble facilitates and supports the exchange of best practices and the sharing of critical knowledge through a robust schedule of technical conferences, seminars and users group meetings. Join us for in-depth, technical information you can use today - and discussions that will help us shape the future.



See you at Doble's NEW Protective Relay Seminar

Lake Buena Vista, Florida, USA
August 23–25, 2011

Find more information at
www.doble.com
+1 617.926.4900
events@doble.com

- ✓ Learn from over 20 protective relay experts
- ✓ Advanced Tutorials
- ✓ Hands-On Relay School



LightsOn

Unitil Empowers Customers with the Latest Web Tools

By Cindy Carroll, Director-Business Development and Justin Eisfeller, Director-Energy Measurement & Control, Unitil.

According to recent reports by the International Energy Agency and United States Energy Information Administration, global energy demand is expected to increase approximately 36 percent¹ and U.S. demand is anticipated to grow more than 30 percent² by the year 2035. Responding to this trend, utilities and energy suppliers are placing increasing emphasis on energy efficiency, developing innovative programs to conserve usage and implementing strict new measures to reduce the environmental impacts from added power consumption. The advent of Smart Grid technology heralds yet another avenue for managing an exponentially growing power grid.

While science, technology and business systems are central to widespread efficiency efforts, customer participation is equally important to their success. After all, experts at Lux Research³ predict there will be nine times the Smart Grid data in 2020 that there is today. This will cause actively engaged participants to ensure that energy initiatives work. Residential and business customers alike will be pivotal to the research and analysis that power suppliers will need to improve, expand and sustain energy efficiency systems.

And yet, many customers remain slow to adopt energy efficiency measures, a phenomenon blamed by industry experts on both a lack of technology awareness and ease of use – or the absence thereof. Increasing energy efficiency program adoption rates will require customers that fully understand the value of such programs. Even more important is that it will challenge users to willingly redesign and sustain new energy consumption habits.

Knowledge is Power

Unitil – a Hampton, New Hampshire based provider of natural gas and electricity to both business and residential customers throughout New England – has long recognized the value of an informed and collaborative role for its customers. As a leading adopter of innovative energy efficiency technologies, Unitil knows that the long-term success of any new energy efficiency programs is in the hands and minds of its customers. At the same time, Unitil fully understands the need to communicate openly and continuously with its customers, and to provide them with ready access to tools that make a difference.

A new survey of more than 7,600 commercial gas customers and 55 utilities by J.D. Power and Associates⁴ points to an alarming trend, scoring declining satisfaction with utility communications, especially around energy savings programs via websites, as being lower than satisfaction with price for the first time in six years.

¹ International Energy Agency, World Energy Outlook 2010

² United States Energy Information Agency, Annual Energy Outlook 2010

³ Lux Research: www.luxresearchinc.com 'The Data Revolution: How Intelligent Hardware Will Drive the \$34 Billion Smart Grid'

⁴ J.D. Power and Associates; "The 2011 Gas Utility Business Customer Satisfaction Study"

Unitil's redesigned website applies advanced Web strategies to enhance site efficiency, functionality and usability. Most importantly, the company designed the new site from a customer's perspective, asking and then answering the question, "What do I need to know to make my home or commercial energy use more convenient, comfortable and affordable?" New technologies, new thinking and a collaborative and interactive business process – all focused on improving the overall user experience and boosting customer participation – are already making a difference.

The new Unitil site actively reflects the company's core commitment to energy efficiency and the increased comfort, productivity and affordability it brings customers of all types. And as a portal to expansive energy and financial tools and information, it reinforces the value of energy

efficiency to the environment, strategic energy security and economic growth. Day in and day out, the site is a versatile working partner for customers seeking the right technologies, services and maintenance solutions for their homes or businesses.

Content Counts

Unitil developed its new site with Drupal, an open-source content management platform that powers millions of websites and applications for diverse local and global businesses. The company selected Drupal for a number of factors, including its flexibility, its wealth of "out-of-the-box" content management systems (CMS), strong social media integration and the depth of its professional developer community. The new Web platform accommodates constant improvements

and supports the latest Internet technologies. Built with a streamlined organizational layout, it also facilitates backend content and structure management. A custom content management control panel generates high internal efficiencies, and an improved user interface integrates enhanced search capabilities and regional personalization that can tailor the site to each unique visitor.

The resulting improvements have provided Unitil with the opportunity to develop and integrate a variety of Web-based tools and online resources. These resources, combined with the company's highly trained customer service and business development staff, bolster education outreach efforts and build more active customer participation in the company's energy efficiency programs.

Introducing the NEW VLF-34E 34 kV VLF Tester Very Low Frequency AC Technology

ISO 9001 : 2008
HIGH VOLTAGE
VLF HIPOT INSTRUMENTS

VLF & DC Output | Sheath Testing | Cable Burning

The VLF-34E is a new generation VLF AC Hipot that uses a solid state design with microprocessor controls. It meets the requirements of applicable world standards regarding cable testing up to 25kV class maintenance testing. **It is light, compact, rugged, and very portable.** Its sine wave output is suitable for using external TD and PD detection equipment. Using a TD and PD option, the VLF-34E is all that is needed for nearly all cable testing up to 25kV class.

Easy to use controls, Programmable test sequences & manual control, USB port for downloading data and for unlimited test report capture, wireless computer interface to control and download Tan Delta diagnostics and for remote control operation via laptop.

Cable Testing Standards met:
IEEE 400.2-2004, IEEE 400-2001, NS 161-2004
VDE DIN 0276-620/621, CENELEC HD 620/621, IEC 60060-3



31 County Rt. 7A • Copske, NY 12516 • Tel.: (518) 329-3275 • Fax: (518) 329-3271 • E-Mail: sales@hvinc.com • Web: www.hvinc.com

How Unitil is Leveraging Web Technologies for Long Term Success

Energy Savings Management Pilot

Between June and August of 2011, Unitil will conduct an innovative pilot program – the *Energy Savings Management Program* – gathering valuable information on the technologies and consumer practices that will best reduce energy costs for customers. The pilot will test several Smart Grid technologies that allow customers to conserve energy usage during periods of peak electrical demand, helping gain insight on the factors that motivate customer participation in energy conservation and efficiency programs.

Eligibility

Eligible participants will be divided into three customer categories, each of which will test a different consumption control method. Smart Grid technologies installed in participating homes enable the homeowner to control energy usage and will collect and relay each household's energy consumption data to Unitil via two-way digital communications using the existing electrical grid as the communications medium. Pilot program participation includes residential Unitil customers owning a home equipped with an air conditioning system and who plan to remain at their current residence for a minimum of nine months.

Participation Incentives

To facilitate customer participation in the program, an additional functionality was integrated into the new Unitil website to help make the program easy to use and to drive energy and environmental-based education. The Energy Savings Management portal at MyUnitil.com offers participants a customized suite of online applications that details real-time energy usage data, prior day energy usage data during off-peak, on-peak and critical peak periods and daily cost of electricity, as well as Web-based tools including a cost comparison calculator that allows users to identify high impact changes in usage specific to their household.

Future Program Plan

The Energy Savings Management program is well positioned for future growth pending a favorable outcome from the pilot suggesting continuation of the program is warranted. By leveraging the advanced Web technologies and technical innovations used to improve the efficiency, functionality and usability of the Unitil website, the program can expand to facilitate more in-depth studies, producing valuable additional data about customer participation and usage and that could help shape future energy efficiency programs.

Lights On



As an example, integrated social media channels including Flickr and YouTube allow for instantaneous content sharing, and the company's Twitter feed, @Unitil, which has grown to nearly 500 followers in only two months, offers real-time system and service restoration updates via Unitil.com's *Outage Center*. A *MyUnitil* account management section features easy online bill pay options as well as resources and advice to help customers lower their energy costs. *Our Community* is a section that details Unitil's involvement in the local neighborhoods it serves and *The Media Center* maintains a current collection of company news, upcoming events and safety tips.

A 'Suite' Set of Tools & Tips

The Energy Efficiency section of Unitil's advanced new website also hosts a variety of energy saving tips and other informational tools for customers to use in managing energy costs. This information, prompted by growing customer demand for online account management, allows Unitil to better serve an expanding customer base. These toolkits access extensive reference libraries that inform and engage customers on energy and environmental topics of all kinds.

Home & Commercial: The *Home* and *Commercial Energy Suites*, for example, provide customers with rich tools to identify and understand their energy usage, costs and any sudden or high impact changes in their energy consumption. The *Home Energy Suite* features energy efficiency calculators and an energy reference library covering everything from electricity fundamentals to compact fluorescent lighting. The *Energy Calculator* helps estimate energy use costs based on user-supplied data and allows customers to perform energy

conservation scenarios to pinpoint opportunities for cost savings. The *Appliance Calculator* helps identify energy usage specific to any number of home appliances. An interactive *Lighting Calculator* displays a cost/use comparison of CFL and incandescent lamps.

Kid's Corner: There is also an educational *Kid's Corner* that explores energy topics, addressing efficiency, safety, conservation and other issues with easy-to-understand content and vivid graphics. Teachers can even download lesson guides from a dedicated *Teacher Feature*. The *InteractiveEnergyHome* link guides visitors on an energy-smart tour of a three-dimensional home. A *HomeEnergySuite* for gas customers includes a calculator dedicated to comparing home heating costs, from oil, propane, heat pumps and gas.

The *CommercialEnergySuite* features an in-depth library on commercial energy systems, building design and technologies, as well as an animated explanation of how energy demand affects cost. A commercial calculator estimates energy usage and cost based on customer inputs and even offers three efficiency levels for each calculation.

Electric + Gas: Both electric and gas efficiency programs that partner with local, state and federal agencies are explained on the website, introducing sizable rebates and incentives for ways to improve efficiency, comfort, convenience and cost. Energy-saving solutions and rebates for qualified weatherization measures and energy efficient equipment are also illustrated, as are important energy saving tips for homes, apartments or small businesses.

Lights On

The new site further includes interactive calculators for electricity and natural gas as well as appliance management tools that help customers understand where energy really goes and how to reduce expenses. And as a practical matter, Unitil provides home weatherization strategies and professional guidance on purchasing major appliances.

For Electric Customers: For electric customers, the new website is a go-to resource for The Energy Star Appliance Program – a collaboration with local retailers to promote the benefits of Energy Star appliances and The Energy Star Lighting Program, in which local retailers offer rebates on the purchase of energy-saving, Energy Star lighting products. The Energy Star Homes Program promotes energy efficient building design and construction practices. And to further encourage customer participation, Unitil rebates and incentives are offered for many of these initiatives.

For Gas Customers: Gas customers can find information on high efficiency space and water heating equipment, available to customers planning to install high efficiency gas-fired equipment. The section also provides information on Unitil's Income Eligible Program and how some customers can receive no-cost energy efficiency benefits.

Free Energy Efficiency Evaluations: Businesses of all sizes can easily access energy-saving information. Small commercial electric customers can learn how to receive free energy efficiency evaluations and incentives on installed equipment and technologies. Large electric customers, as well as those undergoing major renovations or building new facilities, also can access Unitil's financial and technical services through this section of the site. Commercial natural gas customers can tap a wealth of information on programs with Unitil that share costs for efficiency improvements – from multi-family building customers to small and large commercial and industrial programs to new equipment and construction projects.

The Unitil website is a transparent, high technology window. It brings together a company culture of extensive information, clear guidance and prompt solutions – and more than 170,000 New England homes and businesses seeking safe, reliable and affordable energy services. As a portal, and as a resource for all of the company's stakeholders, the site represents Unitil's fundamental commitment to energy conservation and efficiency as well as technology and innovation, encouraging two-way communication and higher levels of customer participation. ■



Delivering Reliability

TruFire Walls

When Fire Containment Is Absolutely Imperative

- Certified 4-Hour Fire Rating
- Ballistic Impact Resistant
- Built To Take The Heat
- Simple & Quick Installation
- Easily Adapted to Interior or Exterior Applications



Learn more about
TruFire Walls by
Oldcastle Precast.



888-965-3227
oldcastleprecast.com/firewall



Cindy Carroll is Director, Business Development for Unitil Service Corp. and has 20 years of experience in the utility industry. Cindy oversees the creation, implementation and advancement of the company's business expansion and economic development initiatives, energy efficiency programs and critical customer management. Prior to joining Unitil, Cindy held positions with EnergyUSA and Northern Utilities, Inc. She is a member of the New Hampshire Business and Industry Association's Energy & Regulated Utilities Committee as well as the Advisory Panel to the New Hampshire Local Energy Committee Working Group. She previously served on the NH Energy Efficiency & Sustainability Board of Directors and holds a Bachelor of Arts degree in Communication from the University of New Hampshire as well as an MBA from New Hampshire College.



Justin Eissfeller is Director, Energy Measurement and Control for Unitil Service Corp. Justin is an expert engineering professional with extensive experience in the energy industry and oversees the company's advanced metering infrastructure, substation systems and SCADA controls, as well as the coordination of its grid modernization efforts and previously served as Unitil's director of engineering. He is a registered Professional Engineer in the State of New Hampshire, a member of the IEEE Power Engineering Society and serves on the Board of Directors for the Energy Council of the Northeast (ECNE). Prior to joining Unitil, Justin held positions with Heidelberg Web Systems and Public Service of New Hampshire. He holds a Bachelor of Science degree in Electrical Engineering with a Power Engineering Option from Northeastern University, as well as an MBA from the University of New Hampshire's Whittemore School of Business.



Proven LiDAR Technology

Know your Line Ratings & Vegetation Clearances

W.I.R.E. Services has the experience and the engineering professionals to provide a full range of services combining LiDAR Technology and Transmission Line Software to bring the most accurate and cost effective solutions.

Our utility experience can enhance your operations:

- LiDAR Data Support
- Transmission Line Modelling
- Thermal Rating Analysis
- T&D Engineering
- Vegetation Management
- Upgrade Engineering

Dependable As-Built Surveys – Know how your line was built, not how it was designed. Gain the ability to verify sag and tension in every span, and analyze critical ground clearance at high temperature operations.

NERC Compliance – W.I.R.E. Services will identify and locate vegetation encroachments along your ROW. We deliver Plan & Profiles of your Transmission Line, and provide you with the exact location of violations.

Find out how to maximize the potential of your utility at www.wireservices.ca



W.I.R.E. Services is an initiative of Manitoba Hydro International Ltd.



THE BIGGER PICTURE

VOL 3 NO. 2

BY BERNADETTE CORPUZ,
SENIOR ASSOCIATE-ELECTRICITY MARKETS GROUP
BORDEN LADNER GERVAIS LLP



District Energy: No longer the Bridesmaid?

Today, most nations of the world have an energy policy of some sort. Reliability and security of supply are typically overarching objectives, even in the most developed and richest of economies. Increasingly, renewable energy has become a household word in energy policies. Renewable energy policy often has an identifying bell tower, like a white paper or a strategic directive issued by the relevant government department, even a gleaming piece of green legislation. In Ontario, district energy does not have a tall bell tower so it can be difficult to extract a definitive policy and regulatory framework. This article describes pieces of the policy and regulatory architecture that touch the district energy landscape in Ontario.

Introduction

In 2009, Ontario attracted worldwide attention when the province's Government introduced the Green Energy and Green Economy Act, 2009 (Green Energy Act). Barely two years later, the number of applications submitted to the resulting Feed-in Tariff (FIT) program is nothing short of astounding. Tens of thousands of applications, coupled with mandatory connections, conservation targets, and transmission and distribution infrastructure planning requirements contained in the Act, has resulted in policy makers and regulators banging their heads to find continued solutions to effect implementation.

Decisions relating to transmission and distribution infrastructure development and the attendant cost allocation occupy significant amounts of attention from the Ontario Energy Board (the province's energy regulator) and the Ontario Power Authority (OPA). But as provincial authorities, distributors and transmitters grapple with

prioritizing connection issues and associated infrastructure development, there is an equally important piece of the clean energy plan sitting perhaps closer to the proverbial home, er, um, load – namely, district energy.

First Things First

For the purposes of this article, district energy is defined as the central provision of heating or cooling. Heating distributes heat generated in a centralized location for residential and commercial heating requirements such as space and water heating. The heat may be obtained from a combined heat and power (CHP) plant. Cooling distributes thermal energy in the form of chilled water from a central plant to multiple buildings through a network of underground pipes for use in space and process cooling.

The Policy Context

Today, any discussion of energy policy in Ontario necessarily begins with the province's Long Term Energy Plan. In November 2010, the Ontario Government issued its updated energy policy – the Long Term Energy Plan (LTEP). Key elements of the LTEP include:

- Demand will grow about 15 percent between 2010 and 2030;
- Ontario will be coal-free by 2014;
- Nuclear power will continue to account for approximately 50 percent of the province's electricity supply ;
- Ontario's target for clean, renewable energy (wind, solar and bioenergy) is 10,700 MW by 2018;
- CHP is an energy-efficient source of power and the OPA will develop a standard offer program for projects under 20 MW; and
- Conservation remains a priority with targets of 7,100 MW.



In February of 2011, the Ministry of Energy issued the Supply Mix Directive, which reflects the key elements of the LTEP. The directive also requires the Ontario Power Authority to prepare a 20-year integrated power system plan (IPSP) to meet the government's goals.

In May 2011, the OPA issued its IPSP Planning and Consultation document to provide stakeholders with information on the status and outlook for the electricity system. The document is intended to guide consultations that will assist the OPA in developing an updated IPSP.

District Energy: The Needle in the Haystack?

District energy does not occupy an express place in the LTEP or the Green Energy Act. However, district energy that generates power from a CHP plant that utilizes an eligible green energy fuel source would be eligible for the FIT Program. In addition, the LTEP does contain an important and explicit reference to the development of a CHP standard offer program. This focus on CHP is an important element in the district energy space.

Ministerial Directives

CHP has been on the Ontario Government's radar as an important element to develop prior to the LTEP.

The Minister of Energy issued a directive to the OPA in June 2005 to procure up to 1,000 MW of CHP projects. In April 2008, the Minister further directed that approximately 100 MW of this be renewable CHP. To date approximately 400 MW have been procured. (Another direction, issued on June 14, 2007, directed the OPA to launch a clean energy supply standard offer program for the procurement of small CHP facilities.)

In November 2010, the Minister of Energy directed the OPA to complete the procurement of the 1000 MW of CHP projects under certain conditions (CHP Directive). The CHP Directive essentially replaced and superseded the previous three CHP and clean energy related directives. Under the CHP Directive, CHP projects under 20 MW are to be purchased under a standard offer program and the larger, under individually negotiated contracts. In both exercises, the OPA is required to consider the following:

1. Projects must be located in parts of the province that the OPA identifies as appropriate;
2. cost effectiveness of the project;
3. whether the project can be accommodated by local distribution systems and whether there are local benefits associated with the project;
4. whether the projects meets technical requirements and is designed as a viable source of supply to a heat load;
5. the extent to which the project is sized to match the heat load requirements (useful heat output);
6. a project's ability to accommodate electricity system load following and other operability requirements; and
7. contract terms shall reflect a reasonable costs for Ontario electricity consumers and a reasonable balance of risk and reward between project proponents and consumers.



A SAFER ALTERNATIVE

- Working heights over 300 ft.
- Horizontal reach over 102 ft.
- Platform capacity to 1500 lbs
- Insulated and non-insulated models available



BRONTO SKYLIFT
SUBSIDIARY OF FEDERAL SIGNAL CORPORATION
352/895-1109
www.bronto.fi



CHP at the Altar: An SOP of My Own

On May 6, 2011, the OPA launched the clean energy standard offer program (CESOP), a day which opened the door for project applications to be accepted until June 30, 2011 (the launch period). The program rules reflect the requirements contained in the CHP Directive.

The CESOP has upfront locational eligibility requirements. The original draft program rules specified a list of areas where projects could be located. The final program rules will accept applications for projects in other areas as well, following the launch period.

The program has two streams: Combined Heat & Power (with which this article is concerned), and Energy Recovery. The CHPSOP is intended to support efficient use of natural gas-fired electricity generating facilities. To be eligible to participate in CHPSOP, a proposed generating facility must constitute a CHP facility that utilizes natural gas for the production of 95% or more of the electricity generated by the facility as averaged over a contract year, and may only

supplement natural gas with "Eligible Alternative Fuels", being renewable biomass, biogas, and any "Eligible Primary Energy Source".

The CHP facility must generate electricity and useful heat output (specified), deliver the electricity through a meter to a distribution system or an electrical host facility, and deliver the useful heat output through a meter to one or more host facilities. Behind-the-meter configurations will only be accepted where there is a sufficient technical rationale.

The OPA will work together with the Independent Electricity System Operator and any applicable transmitter and Local Distribution Company (LDC) to determine if there is sufficient transmission and distribution system connection resources to accommodate the project, taking into account: (i) all prior CESOP Applications, (ii) prior applications under the FIT Program, and (iii) any other generation that is existing, committed or subject to ministerial directive.



Let DigitalGrid Help Tame Yours

DigitalGrid, Inc. specializes in the design, manufacture, and supply of Network Control and Monitoring Systems for underground electrical distribution networks. With our core competency in Power Line Carrier (PLC) technology, our systems use the utility's existing infrastructure as their communications backbone, thus minimizing equipment and installation cost. Our products have the flexibility to interface with other communications systems as well. New offerings include our NWP Master Relay with 2 Way Communications and Secondary Cable Monitoring System.

Phone: 919 844-4866

Email: jbanasiewicz@digitalgridinc.com



The relative prioritization of prior applications under the FIT Program could be problematic for CESOP applicants. The FIT Program has received more than twenty thousand applications since October 2009. Moreover, the CHPSOP Contract is primarily a financial agreement that is intended to provide Suppliers with the benefit of a financial contract based on net revenue support level in \$/MW-month for the 20-year term of CHPSOP Contract.

CHP Individual Procurement Initiatives

The CHP Directive also authorized the procurement of individually negotiated CHP projects greater than 20 MW in capacity. The OPA issued a request for proposals in respect of this on June 21, 2011 (CHP IV). The OPA is targeting October 2011 for the selection of proponents. As with FIT and CESOP projects, the potential for CHP IV projects will be significantly affected by available transmission and distribution. The OPA has stated that

it will target projects that are located in areas that can be accommodated by the transmission and distribution grids.

Any Old-fashioned Regulation?

District energy, including CHP, remains largely unregulated in Ontario. District energy projects are not part of a rate-based regime from which the recovery of costs can be relied upon. However, the regulatory function of transmission and distribution investment planning and cost allocation can substantially affect the viability of CHP projects.

Summary

Although district energy in Ontario remains largely unregulated, the articulation of Ontario's district energy policy has been emerging for the past several years. As discussed above, Ontario's district energy policy has been largely focussed on CHP. The current CESOP and CHP IV procurement exercise are promising attempts to increase CHP's role in energy supply. An optimist will choose to ignore the looming cloud of crowded transmission and distribution capacity. District heating and cooling, absent CHP, will continue to rely largely on market mechanics and, in many instances, municipal interest, to fully develop. So for now, there is no bell tower for district energy in Ontario. But with the inherent localized nature of district energy solutions, perhaps the lack of a policy bell tower is an appropriate analogy. ■

ABOUT THE AUTHOR

Bernadette Corpuz is a Senior Associate in the Electricity Markets Group of the law firm Borden Ladner Gervais LLP (BLG). As a member of the Electricity Markets Group, Ms. Corpuz advises a wide range of energy market participants, including distributors, transmitters, generators, and commercial users with respect to a variety of commercial and corporate transactions related matters, including mergers and acquisitions, financing and energy markets. Ms. Corpuz can be reached at bcorpuz@blg.com or 416-367-6747.

**FASTEST LOOP HEALING TIME
IN THE WORLD ... less than 8ms**

FiberLoop III™ Fiberoptic Transceiver System

Now RS-232/485 SCADA and Ethernet on the same fiber pair and relay-to-relay communications using SEL Mirrored Bits™ or synchronous RS-422!



Other Options:

- Ardax™ orderwire
- 2W/4W audio
- Eaton's Incom™

Free network management software: intuitive, graphical, flexible



Highly reliable, redundant, fault-tolerant, radial and self-healing ring network designs - 128 channels—multi-drop or point-to-point.

**H&L
instruments**
North Hampton, NH USA

The Fiberoptic Communication Specialists

Visit our website to learn more and view a live demo today!

www.hlinstruments.com 603-964-1818

Con Edison and EPRI Collaborate on Manhole Arc Sensing and Recognition Technology

By Neil Weisenfeld, Department Manager-Distribution Cable Systems, ConEd (NY)
and Doug Dorr, Senior Project Manager, Electric Power Research Institute (EPRI)

When underground electrical cables age and deteriorate, the corresponding arcing associated with the pre-failure of the cable can be both a hazard and an impending alarm. If located and repaired before an event occurs, there is a significant opportunity to improve electric power system reliability as well as public and worker safety. To address this concern, the Electric Power Research Institute (EPRI) and Consolidated Edison of New York are collaborating to develop technology that will alert workers to the presence of low-voltage system cable faults in underground structures.

The prototype Manhole Arc Recognition System – or MARS unit – is presently undergoing field trials and preliminary results show that it can detect arcing events with very high accuracy. The work has resulted in a prototype safety device that takes advantage of today's advanced computing and high speed microprocessing technology to warn workers of the possible danger from electrical arcing before they enter a structure and to monitor for the initiation of arcing as crews work in energized manholes, as illustrated below.



MARS device sensor pod readied for lowering into a manhole during field testing

What is Cable Arcing?

We can observe many examples of arcing in the real world, such as lightning strikes, the spark you would get from touching the plus and minus terminals of your car's jumper cables together or even the small spark in the dark observed when you rub your feet on a carpet and touch another person. For electric power systems, cable arcing is the physical phenomenon that occurs when the voltage of any electrical cable or conductor creates an intermittent arc, a spark, or completes an unintended current path over to another object at a different voltage potential. In most cases the other object is the earth, a grounded pipe or conduit, or even other power cables.

Many times this arcing starts after the insulated jacket around the cable, or one of its splice points, becomes nicked, damaged or otherwise degraded and moisture or grit creates an easy path for arcing to begin. While most cable arcing starts out as just a nuisance sparking event after a hard rain or under high moisture conditions, over time, the cable insulation can slowly degrade until the arcing becomes continuous and a smoking or burning condition initiates. Using well-known knowledge of arcing such as the known frequencies and patterns that occur with different kinds of arcs, we can recognize the unique signatures or patterns associated with the various sources of the arc, in a similar manner to fingerprint recognition.

In this case however, we are using the spectral or electrical fingerprint. By knowing exactly what to look for and by having a solid understanding of both real world cable arcing and the many other types of signals that are not associated with degraded electrical cables (such as subway trains, welders, AM radio stations and so on) we can use advanced microprocessing technology to quickly and efficiently discern between the “real thing” and the many other arc sources that could be considered to be “false positives.”



Figure 1: Example Arc Sources from Preliminary Lab Tests

Development of the MARS Unit

Development of the arc detector has been built upon a foundation of earlier proof-of-concept testing by EPRI, which suggested that even small, low-current arcs emit discernable signatures that can be picked up by properly configured off-the-shelf hardware. This led EPRI and Con Edison to collaborate in testing various hardware devices and filtering algorithms under both laboratory and field conditions. Much of this work was performed at the Con Edison Cable and Splice Center for Excellence, an advanced lab environment well suited for such an effort. The overall objective was to develop a relatively low-cost system that detects arc faults with very high sensitivity and a minimum of false alarms. (Figure 2 shows the MARS sensing, detection and alarming scheme.)

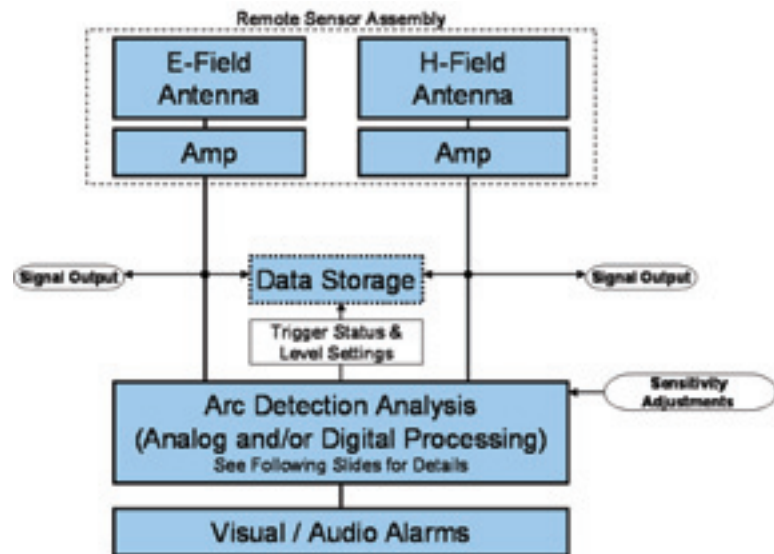


Figure 2: MARS Sensing, Detection and Alarming Scheme

The prototype arc detection system, shown in Figure 3, is now being field tested to confirm its capabilities, reliability and sensitivity objectives. Worker and public safety is a top priority for Con Edison, and if this system can be optimized and then commercialized, there is a significant potential to improve safety for both workers and the public and to advance the state-of-the-art in detection of low-voltage arcing.



Figure 3: The first prototype MARS systems focused on size and cost reduction.

Using the MARS technology is straightforward. The measurement system has two parts. One part houses the micro processor, the data acquisition system, and the alarm system. The other part houses the sensors which detect the electric and magnetic fields produced by the arcing current.

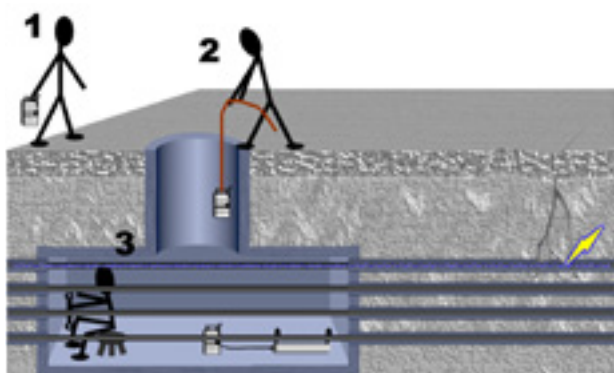


Figure 4: MARS Application Concept

Once the frequencies present within the manhole are sampled, the analysis program runs through a series of “recognition algorithms” and if the right combination of cable arcing signatures is detected, the unit sounds an alarm and initiates a flashing light that alerts workers to the possibility of an arcing concern. After determining that the manhole is safe to enter, workers keep the sensor with them as a warning indicator in case a nearby arcing event begins while they are inside the manhole. (Figure 4)

The major advantage of the MARS technology over other techniques that look for arc signatures is the non-contact sensor pod. Most existing arc sensing technologies require the user to clamp a sensor around the cables to be measured, which is not feasible if the objective is to scan the structure prior to entry. The only non-contact device suitable would be an AM radio receiver, but such a receiver is not capable of distinguishing between real arcing and the many other spectrum emissions that might cause false alarms. The MARS prototype is the first device to accurately accomplish arc detection and alarm objectives with the operator safely outside the underground structure.

The ability to recognize specific electromagnetic signatures that appear during arcing events is central to the detector’s function. Two decades of EPRI research has led to important developments in arc fault recognition and detection within power systems, and the industry now has a better understanding of the nature of the arc itself.

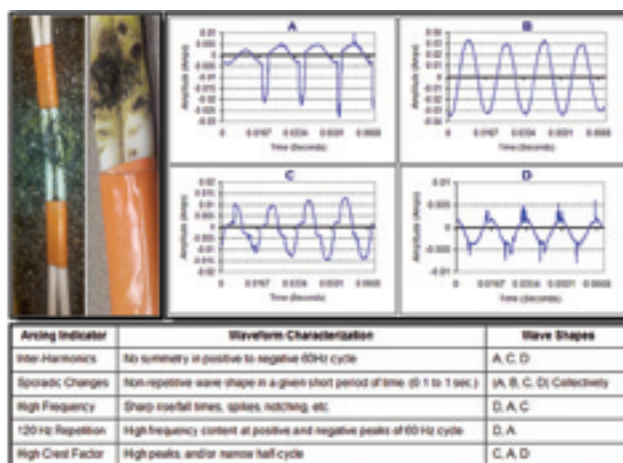


Figure 5: Examples of MARS signal processing techniques

Knowing what to look for – as well as what not to look for – is integral to developing a cost effective, widely deployable technology. For example, a cable arcing event is always going to have a sporadic and random amount of current flow associated with it because the arc path tends to change in moisture content relatively quickly as the arcing occurs. Knowing that the real arcing event will have a random and sporadic peak amplitude or crest factor is just one of eight unique electrical fingerprints that can be used to discern between real cable arcing and other false positives.

Furthermore, our knowledge of the U.S. electrical power systems operation at a 60 Hertz power frequency means that real cable arcing will always have 60Hz and its multiples (120 Hz, 180Hz and so on) embedded within the radio frequency arcing signatures. The broad spectrum of electrical emissions during cable arcing has allowed a number of key signatures to be tested and evaluated, and through digital signal processing, an arc may now be detected in its early stages with a high level of confidence. Overall, the concept is to look for all of the spectral fingerprints simultaneously and quickly discern whether or not real arcing is present before a worker enters a manhole. (Figure 5)

Future Work

Many years of research results have gone into the development of the arc detection algorithms used in the MARS device and the key element that has finally enabled successful field application is today’s microprocessing and computing capabilities – where the signals of interest can be acquired, analyzed and acted upon all in a matter of a few seconds rather than in hours or days.

What this means from a practical application standpoint is that the system and the algorithms have the potential to be integrated with power system protective devices, power quality monitors and even mounted on utility vehicles to perform mobile scanning during regular maintenance trips.

In fact, Con Edison is presently evaluating ways that algorithms similar to those used for the MARS system can be incorporated within a network of sensors that they have deployed across portions of the Manhattan underground system. It is believed that down the road, the MARS technology may become a part of the

electric utility of the future's Smart Grid where we find these advanced diagnostics and recognition systems used with existing monitoring and communications systems and new advanced robotics and sensor applications. ■





FULLY-EQUIPPED REPAIR SHOPS

SINCE 1987

- TEST LAB (**1600KV BIL**)
- WINDING SHOPS
- **50 000 SQ FT**

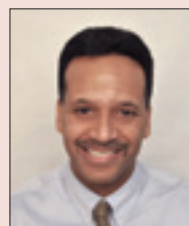


HIGH-VOLTAGE MEDIUM-VOLTAGE DISTRIBUTION

Team of experts and technicians
Quality control; 18/24 month warranty
List of achievements available

For the largest inventory of HV transformers in Canada, visit
WWW.SURPLECHV.COM


ABOUT THE AUTHORS



Neil Weisenfeld is Department Manager of Distribution Cable Systems at Con Edison with responsibility for the engineering, specification and evaluation of the company's distribution cable assets. In his 27 years in the utility industry, Neil has worked in power generation operations, substation and distribution engineering and energy services. He holds a Bachelor's Degree in Electrical Engineering and is a licensed professional engineer in New York State. He is a senior member of the Institute of Electrical and Electronic Engineers (IEEE) and a past Chair of the IEEE Power & Energy Society's New York Chapter.



Doug Dorr is a Senior Project Manager at the Electric Power Research Institute and leads the team that developed the prototype MARS technology. He has been involved with Smart Grid technology research for over ten years and currently leads the EPRI advanced Electromagnetic Compatibility (EMC) field measurement team as well as the efforts to develop hardware useful for advanced power systems measurements, analysis and diagnostics. Dorr is a senior member of the IEEE and is a co-author of two IEEE text books on power quality and transformer design. He also serves as a chairman for committees and working groups associated with lightning protection, power quality, facility/equipment grounding and harmonics. He holds a Bachelor of Science degree in Engineering from Indiana Institute of Technology in Ft. Wayne, Indiana.



Volume 5 No. 2

With William T. (Tim) Shaw
PhD, CISSP

SECURITY SESSIONS

I've been working on the [supply] chain gang...

Welcome to the latest installment of *Security Sessions*, a regular feature focused on security-related issues, policies and procedures. Most people involved in security, and in particular cyber security, understand the need to protect the pathways used to attack our vital cyber infrastructure. For most people that means communication circuits, both wired and wireless. Some people also remember that the world's oldest data exchange mechanism (SneakerNet) also needs to be watched and managed. But one of the least obvious pathways that can be (and has been) used for cyber attacks is something we security folks call the "supply chain". Just like a rear-end, everybody has one, and keeping with that metaphor, it is important to protect it because if you don't protect your supply chain your rear-end might end up in jeopardy too – **Tim**.

We all buy stuff and expect the stuff we buy to be safe, reliable and meet our expectations of quality and performance. No one is ever happy to buy a product and then discover that it is faulty – or worse – unsafe. In business we have the same basic requirements; we just deal with a totally different set of 'stuff'. The set of suppliers and vendors we deal with and their sub-suppliers and sub-vendors (i.e., the people from whom we procure our automation systems and support services and other business-related stuff), are broadly called our "supply chain".

One way an attacker can get to our automation systems is to attack them in the supply chain rather than waiting until we have acquired them and our cyber defenses are all in place, and then, trying to attack them from afar. There have already been several instances of computer-based products – laser printers and 'smart' electric meters come to mind – that

turned out to have secret malware and spyware embedded in their outsourced software or firmware. It is highly probable that more of this is happening as software development is subcontracted to low-cost, but questionably trustworthy, foreign sources.

Supply chain protection means establishing processes and procedures that reduce/eliminate the possibility of something like that happening to you. No one (probably including your automation vendor) wants to discover that the SCADA, DCS or ESD system they provided came with the malware 'factory installed'. Your procurement process ought to be addressing vendor cyber security requirements, including how your vendors test their products and how they manage their software development and subcontracting.

As a former supplier, I must admit to being guilty of incorporating clandestine user accounts and 'back doors' into our systems for our own convenience. That way, when a customer called in a panic because they had screwed things up to where they couldn't even log in any more, it was really handy to have a secret entrance that allowed us to remotely fix the damage they had inflicted. But of course, that means that there are now lots of former employees who know about those back doors and secret passwords. I'm glad that they're all trustworthy individuals, and I'm even happier that most of those older systems have been replaced through the years.

You might think that the practice of including secret 'back doors' in control systems is bizarre and something that no reputable vendor would ever do, but I suggest having a frank discussion with YOUR automation vendors – this practice is far more common than most people think. Part of supply chain protection is ensuring that no such secret "open-sesame" access is built into your automation equipment.

SECURITY SESSIONS

Most of us understand that in the last two decades – and particularly in the last decade – our computer-based automation systems, whether SCADA, DCS, MES or ESD, have all migrated onto the same commercially-available hardware, operating systems, networking and communications platforms as use by conventional IT systems. In fact, we now hear discussions about “Cloud” SCADA systems and the use of virtualization in these kinds of systems. Yes, when automation systems were highly proprietary they were much less likely to be subject to cyber attack. But they also cost ten times as much and became technologically obsolete in short order, making support and maintenance a major issue.

So, this technology migration has had both good and bad outcomes. The basic

fact is that our legacy computer-based automation systems are vulnerable to cyber attacks, not only because they have become far more standardized, but also because they are based on a mountain of software written in languages like ‘C’ that have integral weaknesses and security flaws. Hey, who knew?

As a person who has written a lot of software through the years – much of it in ‘C’ – I’m also guilty of making the assumption that no one would intentionally try to screw up my programs and cause them to malfunction. Of course, when I wrote programs that interacted with humans I knew that human error had to be considered, so I included some basic validity checking. But I never typed random gibberish as user input just to see how the program would respond (okay, maybe just a bit,

but certainly not to any great extent!) The fact is, if my program’s input was coming from another computer or a local program, I just assumed that the input would be provided as specified.

I also presumed that the standard functions and libraries that were part of the programming language were properly designed and thoroughly tested and could be used with confidence. Boy, was I stupid – or, maybe just naive? One of the reasons that you get inundated with security patches and updates on nearly a daily basis is that vendors, researchers and the ‘bad guys’ are constantly looking through that software mountain and finding a treasure trove of design and/or coding flaws to exploit. There is actually an international black market for selling newly discovered (called ‘zero day’) flaws to the highest bidder.

The field of Software Assurance is the study of how to manage the design, development, testing, management, delivery and deployment lifecycle of software such that the software performs exactly as expected. This means no surprises – intentional or accidental – under a full range of environmental conditions, including intentional malicious attacks. In other words, the software is as free from exploitable flaws as is possible and designed to withstand and survive attacks without compromising system security.

Please understand that I am simplifying a very complex field into a few sentences, but this is the gist of the concept. The Department of Homeland Security (DHS) has done an excellent job of collecting a set of ‘best practices’ and creating a common body of knowledge on this subject, in cooperation with various educational and research institutions. And, they have created a set of quite useful pocket references that are freely available on their website: <https://buildsecurityin.us-cert.gov/swa/>.


for a Superior Tamper Resistant Meter Seal...

The Choice is Clear


For over two decades utility companies have chosen the
CLEARSEAL from INNER-TITE®
as their first line of defense against meter tampering

FEATURES

- Clear Body exposes seal tampering
- Insert is designed to fracture with tampering attempts
- One piece design installs quickly and easily
- Available in 16 standard colors
- Optional imprinting of logos and serial numbering available
- New barcode label option
- Sold Only to Utilities



8296361
INNER-TITE CORP
Barcode Label



Call 508-829-6361
for more information
or to request a sample of
the **CLEARSEAL**.

**Expect More and Get It.
INNER-TITE**

INNER-TITE Corp. • www.inner-tite.com • security@inner-tite.com

SECURITY SESSIONS

One significant outcome out of this study of software assurance is a set of coding/programming practices that greatly reduces the possibility of exploitable flaws. There are also 'secure' versions of language function libraries as well as utility programs that can check software for violations of these proper coding practices. One would hope that all vendors whose products are, or contain, software have adopted secure coding practices. One would also hope that they have programs in place to go back and remediate the flaws in their legacy code. Part of supply chain protection deals with the insistence that your vendors address cyber security in their product development processes and overall lifecycle – and require their software subcontractors to do the same.

Another aspect of software assurance is having procedures and processes that guarantee the executable code you receive from a vendor was generated from the approved source code and, that no unauthorized or undocumented additions or modifications were made to the source code along the way. Your vendor ought to have processes in place – a chain of custody if you will – that allows them to be totally confident that the 'run-able' code they provide to you can be directly associated with the approved source code and support libraries.

Something else that often happens with complex automation systems is that vendor field support and maintenance personnel often end up practically living at your site during system installation and commissioning. You get to know these folks and start to treat them like trusted employees and even give them an unescorted, all-access key card. Then at some later point in time you need some support and someone else shows up from that same vendor organization and you just assume that they will be as trustworthy as the personnel who used to support your system. But how do you really know? If you don't know how your vendor vets their personnel and ensures their trustworthiness, you really can't be sure that these new support personnel ought to be given free and unsupervised access to your plant and critical systems. Unfortunately, the notion that people with malicious intentions could work their way into third-party support organizations is not as far fetched as you might think.

Another aspect of supply chain protection is taking steps to verify that vendor/contractor personnel are acceptably trustworthy, either by requiring that your suppliers perform some basic level of background, criminal and financial checks, or performing these

checks yourself prior to allowing supplier personnel into your facility. That is, although you would not be very likely to let a complete stranger enter your computer/control room facilities, when a person shows up wearing a shirt that has your automation vendor's logo on it, you probably don't ask any – or at least not totally adequate – questions about who they are. Instead, many of you probably just lead them into your computer room or control center. That would be fine as long as you can be sure that your vendor is taking their personnel security seriously (an important part of supply chain protection) and ensuring the trustworthiness of their personnel. And even if they do, it would still be a good idea to call for a credential check before allowing them into your critical facilities.

A final but equally important aspect of supply chain protection is performing adequate factory and site acceptance testing on your automation systems and ensuring that such testing goes beyond merely doing a functional and performance test to also include security testing. It is always much more cost effective, and less disruptive, to fix problems at the factory rather than on site. Your acceptance process ought to include sufficient cyber security testing and validation aspects so that you can feel reasonably secure. There are good recommendations out there about the kinds of cyber security testing that you should require from your automation vendor. But that will be subject matter for a future column. – *Tim*

ABOUT THE AUTHOR

Dr. Shaw is a Certified Information Systems Security Professional (CISSP) and has been active in industrial automation for more than 30 years. He is the author of [Computer Control of BATCH Processes](#) and [CYBERSECURITY for SCADA Systems](#). Shaw is a prolific writer of papers and articles on a wide range of technical topics and has also contributed to several other books. He is currently Principal & Senior Consultant for Cyber SECurity Consulting, a consultancy practice focused on industrial automation security and technologies. Inquiries, comments or questions regarding the contents of this column and/or other security-related topics can be emailed to Tim@electricenergyonline.com.

Vegetation Management Innovation

By Clay Tutaj, Senior Consultant
KEMA Inc.



For many utilities, distribution system vegetation management (VM) programs represent both a substantial portion of annual maintenance spending as well as a major point of contention with customers over the aesthetic impacts resulting from VM. But when VM programs are implemented and managed properly, the result is almost always improved reliability -- even for customers who argue about the aesthetics. Yet even utilities with large-scale VM programs in place still experience vegetation-related outages that can account for as much as 20-50% of service outages, measured in customer minutes interrupted. To further mitigate these outages, proper VM program design is imperative.

What does this large annual expense buy in terms of improved reliability and how should a program be designed? The answer often is "it's hard to say." And in reality it is, and here is why:

- Reliability metrics (which would help us measure the effect part of cause and effect) and their composition are often an afterthought to the restoration process.
- During the restoration it may not be clear that the cause was vegetation related as the evidence may be gone.
- Vegetation growth is subject to all manors of variable environmental factors and certainly not necessarily consistent throughout a distribution system.
- Distribution circuits vary greatly in layout, equipment and customers so it follows that the benefits of a program will vary by circuit.

Despite these difficulties, in the modern data-centric utility world surely something can be done to do better. So, what's in our data tool-kit that we can put to work?

- **Outage Management Systems** – Can provide estimates for interruptions caused by vegetation often on a circuit basis; we'll need to make some assumptions about how accurate this information is.

- **Rainfall Measurements** – We've found through work with several utilities that a lagging estimate shows a very high correlation to growth (this may seem obvious, but to quantify it is another thing).
- **Historical Trim** – We'll need to know what's been done in the past and how much it cost us.
- **Circuit Exposure** – Not surprisingly, the amount of exposure to vegetation (of equipment that is susceptible to failure) has a direct relationship to the amount of vegetation-related outages. Some utilities are even starting to collect vegetation data-mappings that can be used to overlay with Geographic Information Systems (GIS) mapping delivery equipment to create an instant exposure map.
- **Circuit Models** – Using information that is already put to use by load-flow programs, can be used to estimate reliability.
- **Weather Data** – Can be used to get detailed statistics about how vegetation-related outages vary under different conditions.

Several utilities are already putting this available information to use in innovative ways, not only estimate the future impact of their current program on reliability, but also to consider, drive and justify program changes.

Cycle Trimming: An Example

As an example of this, let's take a look at a common 'go-to' installment of many VM programs: Cycle Trimming. Cycle trimming can come in several varieties, but the most basic is a flat cycle, where every 'X' years a circuit is trimmed. Some variations of this are reliability-based trimming (i.e., poor reliability feeders are trimmed more frequently) or some further granularity, such as only trimming laterals every 8 years, while primaries are trimmed every 4 years.

Using historical reliability metrics attributed to vegetation on a feeder basis, circuit exposure, and historical trim dates for those same feeders, we can correlate the years-since-trim and outage events – the time elapsed since a circuit was last trimmed.

FIGURE 1 shows an example of how the relationship between years-since-trim and outage events may look. (A single outage event may lead to many customer interruptions depending on where the outage event occurs on the system.) It's important to note that this figure implies that no matter how frequent the trim cycle is – even in 'Year 0' – vegetation-related outage events still occur; so what gives?

Well, the cycle trimming adheres to a standard – this standard, which defines the minimum acceptable distance between lines and vegetation – will vary by utility. The types of interruptions we are experiencing are outside of this range and still making contact or, perhaps are the result of some violation of the standard. Given the current standard, in this example it appears that the lowest we can expect outage interruptions to go (even if we trimmed all the time) would be about 0.16 outage events per year mile. In other words, if we had a 10-mile long distribution line and a year elapses on average between trims, we would expect to see 1.6 outage events.

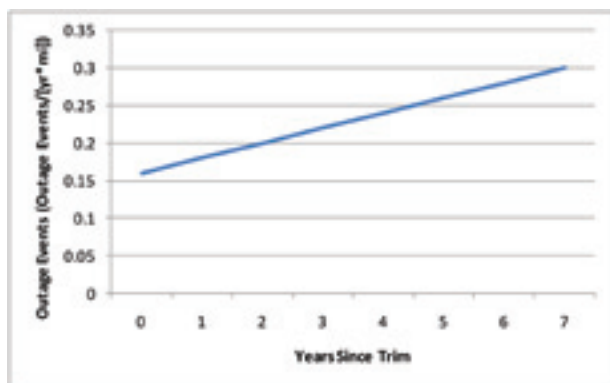


Figure 1: Vegetation-Related Outages by Years-Since-Trim

Further, this relationship between outage events can be employed to estimate the direct reliability impact on a given circuit using a model or even system-wide by

aggregating or extrapolating. Using this outage event model and a reliability modeling approach, alternatives to the current trim cycle can be investigated with a reasonable level of confidence in the impact of those changes. This can be taken even further by comparing the marginal costs and benefits or even by comparing those results with alternative reliability solutions to find the best overall value.

Solutions

How else can we put this information to work for us?

- Determine the benefit of switching from a 'one-size-fits-all' solution to a cycle schedule that targets the best bang-for-the-buck circuits. It's likely that better reliability can be achieved for the same cost or, the same reliability for a lower cost.
- Determine how rainfall impacts growth rates and reliability and what can be expected in the upcoming years.
- Determine the impact of historical changes in a vegetation management program. Often, a utility will want to know what a major program change has meant in terms of benefits; that is, did it really live up to expectations?

Plus, with the increasing amount of information at the disposal of utilities across their entire organizations, pulling the pieces together in creative ways can answer some otherwise tough questions... and having those answers can be a real advantage.

ABOUT THE AUTHOR

Clay Tutaj is a Senior Consultant with KEMA Inc. in Raleigh, NC. Mr. Tutaj provides analytical solutions for reliability, asset management, emergency response and storm forensics for transmission and distribution systems internationally. He can be reached at clay.tutaj@kema.com.

A

A.I. ORLOFF, ELECTRICAL ENGINEER

14072 Carfaz Ave.
Tustin, CA, U.S.A. 92705
Tel: (949) 261-5491 • Fax: (714) 730-6653
Web: www.ocsoft.us

**ABB**

8585 Trans-Canada Hwy
Montreal, QC, CA H4S 1Z6
Tel: (514) 856-6266 • Fax: (514) 856-6297
Web: www.abb.ca

ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 120,000 people. In Canada, ABB employs over 2,500 people in 40 locations from coast to coast.

ACA CONDUCTOR ACCESSORIES

PO Box 3127
Spartanburg, SC, U.S.A. 29304
Tel: (864) 486-7361 • Fax: (800) 866-9596
Web: www.acasolutions.com

ACCENT

7710 NE Greenwood Dr.
Vancouver, WA, U.S.A. 98662
Tel: (360) 882-4002
Web: www.varasset.com

ACLARA

945 Hornet Drive
Hazelwood, MO, U.S.A. 63042
Tel: (800) 297-2728
Web: www.aclara.com

ADG ECO LIGHTING PRODUCTS

29397 Agoura Rd #110
Agoura Hills, CA, U.S.A. 91362
Tel: (818) 597-9494 • Fax: (818) 597-9696
Web: www.adgecolp.com

ADVANCED POWER TECHNOLOGIES

215 State Route 10, Bldg 2
Randolph, NJ, U.S.A. 07869
Tel: (973) 328-3300 • Fax: (973) 328-0666
Web: www.advpowertech.com

AE PRODUCTS, INC.

1349 South Killian Drive
Lake Park, FL, U.S.A. 33403
Tel: (866) 848-7756
Web: www.aeproducts.net

**AEMC INSTRUMENTS**

200 Foxboro Blvd.
Foxboro, MA, U.S.A. 02035
Tel: (508) 698-2115 • Fax: (508) 698-2118

AEMC® Instruments is an industry leader in current measurement probes, power quality analyzers, ground resistance testers (including the new revolutionary tower testing system) and insulation resistance testers. Our full product line also includes clamp-on meters, transformer radiometers, power quality meters, harmonic power meters, data loggers, lightmeters, oscilloscopes, cable testers and other electrical test instruments. www.aemc.com

AFL

PO Box 3127
Spartanburg, SC, U.S.A. 29304
Tel: (864) 433-0333 • Fax: (864) 433-5363
Web: www.aflglobal.com

**AGENTIS INC.**

776 N Oaklawn Ave
Elmhurst, IL, U.S.A. 60126
Tel: 630 359 6210 • Fax: 630 833 0493
Web: www.agentisenergy.com

Agentis supplies electric utilities energy-efficiency software applications for their business customers. The Agentis Platform uses energy data combined with company demographics to provide business customers with comparisons to similar businesses and recommendations for optimized usage. Utilities educate and engage their customers with applications that improve customer satisfaction and drive change.

**AIR TECHNICAL INDUSTRIES**

7501 Clover Ave.
Mentor, OH, U.S.A. 44060
Tel: 440-951-5191 • 800-321-9680
Fax: 440-953-9237
Web: www.airtechnical.com

Air Technical Industries (ATI) manufactures innovative material handling equipment. Since 1964, ATI has developed over 2000 proprietary ergonomic products to improve safety while increasing efficiency and productivity. ATI's most popular products are Zero-Low lift tables, dock lifts, scissors lifts, self-propelled hydraulic cranes, knuckle booms, truck cranes, jib and gantry cranes, and manipulators.

ALTEC HILINE, LLC

PO Box 16288
Duluth, MN, U.S.A. 55816-0288
Tel: (218) 722-9200 • Fax: (218) 722-6443
Web: www.altec.com

**ALUMA-FORM INC**

3625 Old Getwell Road, PO Box 18555
Memphis, TN, U.S.A. 38118-0555
Tel: 901-362-0100 • Fax: 901-794-9515
Web: www.alumaform.com

Aluma-Form, Inc. manufactures industry-leading fiberglass, aluminum and apitong wood products for the electric utility and communications industries, and specialize in custom engineered solutions. All of our products offer superior performance with the shortest lead times in the industry. Visit us online at www.alumaform.com for our latest product catalogs.

AMERICAN PERMALIGHT INC

2531 W 237th Street #113
Torrance, CA, U.S.A. 90505
Tel: (310) 891-0924 • Fax: (310) 891-0996
Web: www.americanpermalight.com

AMERICAN SUPERCONDUCTOR (AMSC)

64 Jackson Road
Devens, MA, U.S.A. 01434-4020
Tel: 978 843 3000 • Fax: (978) 842-3364
Web: www.amscom

AMERICAN WIRE GROUP

1920 E HALLANDALE BEACH BLVD PH8
HALLANDALE, FL, U.S.A. 33009
Tel: 954-455-3050 • Fax: 954-455-9886
Web: www.buyawg.com

**AMETEK POWER INSTRUMENTS**

255 North Union Street
Rochester, NY, U.S.A. 14605
Tel: (585) 263-7700
Web: www.ametekpower.com

AMETEK Power Instruments provides high end, best in class electronic products including fault and transient recorders, TI/EI TDM and packet-based broadband Ethernet multiplexers, PMUs, annunciators, sequence of event recorders, power-line carrier, protective relay channels, revenue meters, sensors and turbine and boiler thermocouples. AMETEK Power Instruments consists of the following brand names: Rochester Instrument Systems, Pulsar Technologies, Panalarm, Gulton Statham, Scientific Columbus.

ANCONA CONTROLS

28021 Grand Oaks Court
Wixom, MI, U.S.A 48393
Tel: (248) 624-5600 • Fax: (248) 360-4704
Web: www.anconacontrols.com

ANDAX INDUSTRIES LLC

613 W Palmer St.
St Marys, KS, U.S.A 66536
Tel: (800) 999-1358 • Fax: (888) 443-4732
Web: www.andax.com

ANGLESPLITTER

PO box 1534
Stillwater, OK, U.S.A 74076
Tel: (580) 761-7137
Web: www.anglesplitter.com

APEX COVANTAGE

198 Van Buren St., 200 Presidents Plaza Suite 120
Herndon, VA, U.S.A 20170
Tel: (703) 709-3000
Web: www.apexcovantage.com

ARANI SYSTEMS CORP.

8925, Blvd. St-Laurent, Unit 129
Montreal, QC, CA H2N 1M5
Tel: (888) 992-7264 • Fax: (514) 903-2297
Web: www.arani.ca

**ARBORMETRICS SOLUTIONS LTD**

224 Thompson Street Unit 104
Hendersonville, NC, U.S.A. 18792
Tel: (407) 339-1733 • (866) 685-1880
Web: www.arbormetricssolutions.com

ArborMetrics Solutions, Inc. specializes in combining expertise, software, hardware and people into mobile workforce solutions that streamline your vegetation management program. Our customers include utilities, municipalities and other agencies who are interested in finding ways to maximize the efficiency and effectiveness of their vegetation management programs.

ARTECHE PQ POWER QUALITY DIVISION

16964 W. Victor Rd.
New Berlin, WI, U.S.A 53151
Tel: (262) 754-3883 • Fax: (262) 754-3993
Web: www.artechepq.com

ARTECHE USA

18503 Pines Blvd.
Pembroke Pines, FL, U.S.A 33029
Tel: (919) 279-5340 • Fax: (919) 362-9998
Web: www.coilinnovation.at

ASK PRODUCTS INC.

544 N. Highland Ave.
Aurora, IL, U.S.A 60506
Tel: (630) 896-4056 • Fax: (630) 896-4092
Web: www.asklug.com

**ASPLUNDH TREE EXPERT CO.**

708 Blair Mill Road
Willow Grove, PA, U.S.A. 19090
Tel: 1-800-248-8733 • Fax: 215-784-4405
Web: www.asplundh.com

HUGHES BROTHERS, INC.

TRANSMISSION & DISTRIBUTION
HUGHES BROTHERS
WOOD STEEL
FIBERGLASS
MATERIAL MFRS.

**T & D
MATERIALS
SINCE 1921**

www.hughesbros.com 402-643-2991

Circle 17 on Reader Service Card

Since 1928 the Asplundh Tree Expert Co. has been dedicated to efficient, safe, and cost-effective vegetation management services for the electric utility industry. These services include scheduled and emergency tree pruning and removals, right-of-way clearing and maintenance with specialized equipment, and vegetation management with herbicides.

AUTOVISION WIRELESS INC

360 Deerhide Crescent
Toronto, ON, CA M9M 2Y6
Tel: (416) 700-2673
Web: autovisionwireless.com

AVI-SPL, INC.

6301 Benjamin Road Suite 101
Tampa, FL, 33634
Tel: 888-619-9083 • Fax: 800-244-8630
Web: crg.avispl.com

AXIOMATIC TECHNOLOGIES CORPORATION

5915 Wallace St.
Mississauga, ON, CA L4Z 1Z8
Tel: 1-905-602-9270 x225 • Fax: (905) 602-9279
Web: www.axiomatic.com

AZTECH ASSOCIATES INC.

805 Bayridge Dr.
Kingston, ON, CA K7P 1T5
Tel: (613) 384-9400 • Fax: (888) 334-5832
Web: www.aztechmeter.com

B

BARON USA

350 Baron Circle
Cookeville, TN, U.S.A. 38501
Tel: (931) 528-8476 • Fax: (931) 526-2219
Web: www.baronusa.com

BBCFASTENERS

4210 Shirley Lane
Alsip, IL, U.S.A. 60803
Tel: (708) 597-9100 • Fax: (708) 597-0423
Web: www.bbcfasteners.com



BELYEA COMPANY, INC.

2200 Northwood Avenue
Easton, PA, U.S.A. 18045-2239
Tel: (610) 515-8775 • Fax: (610) 515-1263
Web: www.belyeapower.com
See ad page 115

Belyea Company, Inc., has been in business since 1908. We are proud of the number of generator sets, circuit breakers and transformers that we have sold over the last few years. We have provided used surplus electrical power equipment to countries around the world, including the Bahamas, Iraq and India.

BLUE LINE INNOVATIONS

187 Kenmount Dr
St John's, NEWFOUNDLAND, CA A1B 3P9
Tel: (709) 579-3502
Web: www.bluelineinnovations.com

BLUE PILLAR

9025 N. River Road, Ste 150
Indianapolis, IN, U.S.A. 46240
Tel: (888) 234-3212 • Fax: (317) 663-2218
Web: www.bluepillar.com

BRAND FX BODY COMPANY

658 Glenway Ave
Winnipeg, MANITOBA, CA R2G1J1
Tel: (204) 223-5944
Web: www.brandfxbody.com

BRANTFLO MOBILE EQUIPMENT TECHNOLOGY

164 Copernicus Blvd., Unit 2
Brantford, ON, CA N3P 1Y5
Tel: (888) 228-3370 • Fax: (519) 758-9177
Web: www.brantflo.com

BREWS SUPPLY LTD.

5915 Airport Road-Suite 830
Mississauga, ON, CA L4T 1T1
Tel: (905) 564-1116 • Fax: (905) 964-1197
Web: www.brewssupply.com



BRONTO SKYLIFT

251 City View Road
Westfield, MA, U.S.A. 01085
Tel: 352-895-1109
Web: www.bronto.fi

See ad page 40

Bronto Skylift offers a wide variety of insulated and non-insulated truck mounted aerial work platforms with platform heights to over 300-ft and horizontal outreach to 108-ft. With over 6000 aerials in operation worldwide, Bronto machines are the utility industry's preferred aerial device.

BROOKS UTILITY PRODUCTS GROUP

23847 Industrial Park Drive
Farmington Hill, MI, U.S.A. 48335-2880
Tel: 888-687-3008 • 888-687-3008
Web: www.brooksutility.com

C

C.J. ENTERPRISES

P.O. BOX 570430
TARZANA, CA, U.S.A. 91356
Tel: (818) 996-4131 • Fax: (818) 708-8473
Web: www.cjenterprises.com

CABLEK INDUSTRIES

1175 Transcanada Hwy
Montreal, QC, CA H9P 2V3
Tel: (514) 421-7171
Web: www.cablek.com

CALAMP

1401 N. Rice Avenue
Oxnard, CA, U.S.A. 93030
Tel: (805) 987-9000 • Fax: (805) 987-8359
Web: www.calamp.com

CALBRITE

2207 165th Street
Hammond, IN, U.S.A. 46320
Tel: (800) 225-7473
Web: www.calbrite.com



CD NOVA & ASSOCIATED COMPANIES

5330 Imperial Street
Burnaby, BC, CA V5J 1E6
Tel: (604) 430-5612 • Fax: (604) 437-1036
Web: www.cdnova.com

A Canadian National Distributor of equipment serving the electrical power/energy industries for SCADA, Teleprotection, Multiplexers, Fault/Event Recorders, VLFHV Cable Test, Protective Relay Test Sets, Transformer Condition Monitors, Protective Relays, Tapchanger Controls, Vacuum Reclosers, Sectionalizers, Circuit Breakers, Tapchangers Test/analysis. Wireless Technology systems, Revenue Meter certification.

CELERGY NETWORKS, INC.

2011 Palomar Airport Rd.
Carlsbad, CA, U.S.A. 92011
Tel: (760) 268-1913
Web: www.celergy.com

CG POWER SYSTEM INC.

101 Rochman Street
Winnipeg, MANITOBA, CA R3T 0L7
Tel: (204) 474-5775
Web: www.cgglobal.com

CIRCUIT BREAKER SALES CO. INC.

PO Box 1098
Gainesville, TX, U.S.A. 76241
Tel: (940) 665-4444 • Fax: (940) 665-4681
Web: www.cbsales.com

**CN UTILITY CONSULTING**

120 Pleasant Hill Avenue N. 190
Sebastopol, CA, U.S.A. 95472
Tel: 707.829.1018
Web: www.cnutility.com

CN Utility Consulting is a consulting and operations team with expertise in utility vegetation management (UVM) laws, regulations and best practices. We offer utility arborists/foresters, industry analysis, benchmarking, program/compliance reviews, expert witness testimony, software, LIDAR, QA/QC, and turn-key UVM operations to improve UVM programs for transmission and distribution systems.

COHESIVE INFORMATION SOLUTIONS

8215 Madison Blvd, Suite 150
Madison, AL, U.S.A. 35758
Tel: (678) 233-1280
Web: www.cohesivesolutions.com

COMMONWEALTH ASSOCIATES, INC.

P.O. Box 1124, 2700 W. Argyle Street
Jackson, MI, U.S.A. 49204-1124
Tel: (517) 788-3000 • Fax: (517) 788-3003
Web: www.cai-engr.com

COMSQUARED SYSTEMS

5125 Peachtree Industrial Blvd
Norcross, GA, U.S.A. 30092
Tel: (800) 592-3766
Web: www.comsquared.com

**CONCAST INC.**

1010 North Star Drive
Zumbrota, MN, U.S.A. 55992-0069
Tel: (507) 732-4095 • Fax: (507) 732-4094
Web: www.concastinc.com

Concast Inc. has specialized in precast concrete products for the electrical industry since 1969. Products include cable distribution trench (for below ground substation control, communication/power cables, waste water recovery systems and industrial piping) Box pads, flat pad, ground sleeves, and vaults (which are ideal for pad mount electrical equipment).

**CONDUX TESMEC INC.**

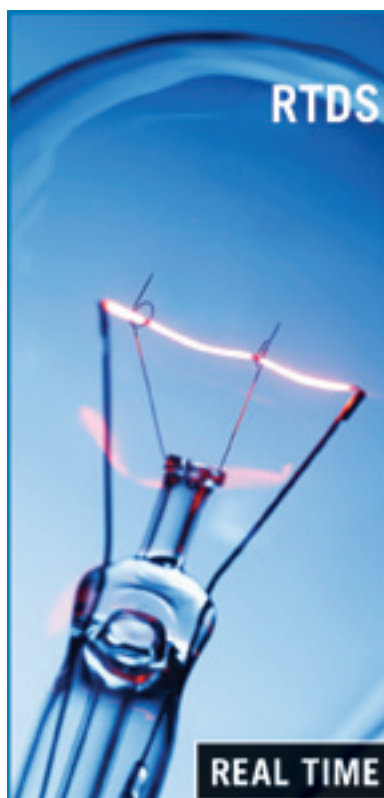
145 Kingswood Drive P.O. Box 668 Suite 1
Mankato, MN, U.S.A. 56602
Tel: (507) 387-8069 • 1-877-854-1750
Fax: (507) 387-3855
Web: www.conduxtesmec.com

See ad page 59

Condux Tesmec, Inc. provides stringing equipment and accessories to the North American transmission and distribution market. In addition to pullers, tensioners and puller-tensioners, products include rolling grounds, head boards, blocks, pulling clamps and more. The equipment allows utilities and utility contractors to improve installation productivity and efficiency while limiting downtime and improving job site safety.

COOPER POWER SYSTEMS - ENERGY AUTOMATION SOLUTIONS

730, Commerciale St. Suite 200
St-Jean-Chrysostome, QC, CA G6Z 2C5
Tel: (418) 834-0009 • Fax: (514) 227-5256
Web: www.cooperpowereas.com



RTDS POWER SYSTEM SIMULATORS KEEPING THE LIGHTS ON

RTDS Technologies is the world leader in real-time simulation for the power industry. As power systems change rapidly so must their simulation. Since worst case power system conditions are rare and dangerous to induce in the real world, the Real Time Digital Simulator allows them, and the protection and control equipment installed in them, to be tested accurately in a realistic and safe environment.

With over 160 RTDS® Simulators installed worldwide, including the world's largest and most advanced simulator, RTDS Technologies provides unparalleled, powerful leadership to rely on.

Power System Applications include:

Smart Grid Applications - IEC 61850, SCADA Interface, RAS scheme investigation...
Distributed Generation - Wind, Solar, Fuel Cell...
Control System Testing - HVDC, SVC, FACTS, Generation, VSC, Wind...
Protective Relay Testing - Line, Generator, Transformer, Busbar...
Education and Training - Experimentation, Demonstrations, Research...
General Power System Studies - Small to Large Scale with Stability Format Conversion



REAL TIME DIGITAL SIMULATION FOR THE POWER INDUSTRY

RTDS Technologies Inc. | 100-150 Innovation Drive | Winnipeg, Manitoba, Canada R3T 2E1
Tel: 204.989.9700 Fax: 204.452.4303 | Email: rtds@rtds.com | Web: http://www.rtds.com



**CORELOGIC**

4 First American Way
Santa Ana, CA, U.S.A. 92707
Tel: (800) 426-1466
Custom spatial data solutions from CoreLogic®

Get access to the information you need when and how you need it. From right-of-way planning to tax jurisdiction accuracy, CoreLogic offers complete control over the way you view, access and interact with our industry-leading geocoding, site-U.S. tax and spatial analytics data sets.

CPS SECURITY SOLUTIONS

436 West Walnut Street
Gardena, CA, U.S.A. 90248
Tel: 310-878-8128

CYBERXLINK

24335 Prielipp Rd Suite # 129
Wildomar, CA, U.S.A. 92595
Tel: (951) 691-5708
Web: www.cyberxlink.com

D

DAVID CHILDRESS ENTERPRISES

1709 Crossings Place
Griffin, GA, U.S.A. 30223
Tel: (678) 386-9132
Web: www.davidchildressenterprises.com

DCD DESIGN & MANUFACTURING LTD.

180 - 6620 McMillan Way
Richmond, BRITISH COLUMBIA, CA V6W 1J7
Tel: (888) 794-8357 • Fax: (604) 232-4445
Web: www.dcdesign.com



DELTA STAR
INCORPORATED

DELTA STAR, INC. (LYNCHBURG)

3550 Mayflower Drive
Lynchburg, VA, U.S.A. 24501
Tel: 1-800-368-3017
Web: www.deltastar.com

Delta Star is the innovation leader in customer-engineered design. Each transformer is handmade by craftsmen who understand that quality has made Delta Star the choice for power companies around the world. Delta Star manufactures custom-made, quality medium-power transformers, mobile transformers and substations in the United States.

DELTA STAR, INC. (SAN CARLOS)

270 Industrial Road
San Carlos, CA, 94070-6212, U.S.A.
Tel: 1-800-892-8673
Web: www.deltastar.com

DENDOFF SPRINGS

12045 Old Yale Road
Surrey, BRITISH COLUMBIA, CA V3V 3X4
Tel: (604) 580-3400 • Fax: (604) 580-3600
Web: www.dendoff.com

DENT INSTRUMENTS

925 SW Emkay Dr.
Bend, OR, U.S.A. 97702
Tel: (800) 388-0770 • Fax: (541) 385-9333
Web: www.dentinstruments.com

DETEKION SECURITY SYSTEMS, INC.

200 Plaza Drive
Vestal, NY, U.S.A. 13850
Tel: (607) 729-7179 • Fax: (607) 729-5149
Web: www.detekion.com

DICA SAFETY TECH OUTRIGGER PADS

PO Box 188
Panora, IA, U.S.A. 50216
Tel: (800) 610-3422 • Fax: (641) 755-4810
Web: www.dicausa.com

DigitalGrid, Inc.

DIGITALGRID, INC.
8307 Six Forks Road Suite 107
Raleigh, NC, U.S.A. 27615
Tel: 919-844-4866 extn 224
Web: www.digitalgridinc.com

See ad page **41**

DigitalGrid, Inc. specializes in the design, manufacture, and supply of Network Control and Monitoring Systems for secondary networks. With our core competency in Power Line Carrier (PLC) technology, our systems use the utility's existing infrastructure as their communications backbone, thus minimizing equipment and installation cost. Where other communications mediums (fiber, Ethernet, etc.) are used, our products have the flexibility to interface with these systems as well. New offerings include our NWP Master Relay and Secondary Cable Monitoring System.

**DIS-TRAN STEEL, LLC**

4725 Hwy 28 E
Pineville, LA, U.S.A. 71360
Tel: 318-448-0274 • Fax: 318-445-4454
Web: www.distran.com

DIS-TRAN Steel, LLC provides the utility industry transmission and substation steel structures. These include tapered tubular poles, standards shapes, and lattice structures. We provide outstanding customer service, creative design options, flexible scheduling, and the highest quality product for our customers. We are the ELITE substation and transmission steel supplier.

**DIS-TRAN WOOD PRODUCTS, LLC**

4725 Hwy 28 E
Pineville, LA, U.S.A. 71360
Tel: 318-448-0274 • Fax: 318-487-8234
Web: www.distran.com

DIS-TRAN Wood Products, LLC was organized in 1965 and manufactures and treats a complete line of Douglas Fir and Southern Yellow Pine distribution crossarms, ground molding, and transmission arms and assemblies. We serve our customers from the west coast to the east coast with two state-of-the-art manufacturing facilities.

DIVERSIFIED PRODUCTS

1001 Webster Ave
Waco, TX, U.S.A. 76706
Tel: (254) 757-1177 • Fax: (254) 757-1188
Web: www.diversifiedproduct.com

DMC POWER (FORMERLY DEUTSCH METAL COMPONENTS)

14502 S. Figueroa St.
Gardena, CA, U.S.A. 90248
Tel: 888-SWAGE-NOW • Fax: (310) 715-9488
Web: www.dmcusa.com/

**DOBLE ENGINEERING CO.**

85 Walnut Street
Watertown, MA, U.S.A. 02472
Tel: (617) 393-2908 • Fax: (617) 926-0528
Web: www.doble.com

See ad page **33**



2011

MARRIOTT HALIFAX HARBOURFRONT, HALIFAX
NOVA SCOTIA / CANADA
SEPTEMBER 6-8
WWW.CIGRE.CA

CIGRÉ Canada Conference on Power Systems: PROMOTING BETTER INTERCONNECTED POWER SYSTEMS



CORPORATE SPONSORS

ABB **SIEMENS** **DESSAU**

SEVES
SEDIVER

HOSTED BY

NBSO
ERNB

Emera

OFFICIAL MEDIA

Electric Energy T&D
MAGAZINE

Electric Energy
ONLINE.com

Now in 110 countries, **Doble Engineering** has been helping clients in the electric power industry improve operations and optimize system performance for more than 90 years. Doble provides diagnostic instruments, knowledge, and consulting and testing services for the benefit of energy generation and delivery companies and industrial power users worldwide.



DOW WIRE & CABLE

Houston Dow Center
400 W. Sam Houston Pkwy. S.
Houston, TX 77042, USA
Tel: 1-800-441-4DOW
Web: www.dowwireandcable.com

See ad page **7**

Dow Wire & Cable, a business unit of The Dow Chemical Company, is a leading global provider of products, technology and solutions that set industry standards for reliability, longevity, efficiency, ease of installation and protection that the industry can count on in the transmission, distribution and consumption of power, voice and data.

DRANETZ - BMI

1000 New Durham Road
Edison, NJ, U.S.A. 08818
Tel: (732) 287-3680 • Fax: (732) 248-1834
Web: www.dranetz-bmi.com

DSG-CANUSA

25 Bethridge Road
Toronto, ON, CA M9W 1M7
Tel: (416) 743-7111
Web: www.dsgcanusa.com



DUECO INC.

N4 W22610 Bluemound Rd.
Waukesha, WI, U.S.A. 53186
Tel: 262-547-8500 • Fax: 262-544-8407
Web: www.dueco.com

As the largest provider of Terex bucket trucks and digger derricks in the nation, **DUECO** also provides Terex and Fassi cranes, stringing/tensioning equipment, SDP and Skylift mini-derricks and Hybrid Utility Trucks, including Odyne. Our team will ensure each unit is developed to fit your exact specifications and you are well serviced.

DWYER INSTRUMENTS INC

102 Hwy 212
Michigan City, IN, U.S.A. 46360
Tel: (800) 872-9141 • Fax: (219) 872-9141
Web: www.dwyer-inst.com

E

E / SYSTEMS

Mack Pl., - 566
St. Clair Sh., MI, U.S.A. 48080
Tel: (313) 882-1133
Web: www.enxex.com

EARTH NETWORKS

12410 Milestone Center Drive, Suite 300
Germantown, MD, U.S.A. 20876
Tel: (978) 897-7705
Web: www.earthnetworks.com



EFACEC ADVANCED CONTROL SYSTEMS

2755 Northwoods Parkway
Norcross, GA, U.S.A.
Tel: 800-831-7223 • Fax: (770) 448-0957
Web: www.efacec-acsc.com

See ad page **25**

Efacec Advanced Control Systems is a leading provider of smart grid technology to the global electric power industry. Our solutions include SCADA, integrated DMS/OMS, EMS, substation/feeder automation. We offer the most sophisticated lineup of substation controllers/feeder RTUs; and the world's most advanced distribution automation suite. Our innovative technologies help utilities build the next generation grid – today.

EKLUND INFRARED INC.

2985 Gordy Parkway
Marietta, GA, U.S.A. 30066
Tel: (770) 578-4435 • Fax: (770) 578-9899
Web: www.coronacamerarental.com

ELECTRIC POWER ACCESSORIES CORPORATION (EPAC)

558 Massey Rd. Unit 7&8
Guelph, ON, CA N1K 1B4
Tel: (866) 289-3722 • Fax: (519) 826-5779
Web: www.epac.ca

ELECTROMARK

6188 West Port Bay Road
Wolcott, NY, U.S.A. 14590
Tel: (800) 295-8247
Web: www.electromark.com

ELECTRONIC TECHNOLOGIES INTERNATIONAL

1100 North Main St
Fort Atkinson, WI, U.S.A. 53538
Tel: (920) 563-0840
Web: www.etimfg.com

ELLIOTT EQUIPMENT COMPANY

4427 S. 76th Circle
Omaha, NE, U.S.A. 68127
Tel: (402) 592-4500 • Fax: (402) 592-4553
Web: www.elliottequip.com

ELSTER

208 South Rogers Lane
Raleigh, NC, U.S.A. 27610
Tel: (919) 212-4800 • Fax: (919) 212-4801
Web: www.elster.com

EMC PACIFIC HOLDINGS

840 Woodside Crescent
Qualicum Beach, BRITISH COLUMBIA, CA V9K 2K8
Tel: (250) 752-5051 • Fax: (250) 738-0189
Web: www.emcpacific.com.au

EMPIRE LEVEL MFG. CORP.

929 Empire Drive
Mukwonago, WI, U.S.A. 53149
Tel: (262) 368-2000 • Fax: (262) 368-2127
Web: www.empirelevel.com

ENCORE NETWORKS

3800 Concorde Parkway, Suite 1500
Chantilly, VA, U.S.A. 20151
Tel: (703) 318-7750 • Fax: (703) 787-4625
Web: www.encorenetworks.com

ENERSCAN ENGINEERING INC.

22 Julies Walk
Halifax, NOVA SCOTIA, CA B3M 2Z7
Tel: (902) 445-4433 • Fax: (902) 457-3283
Web: www.enerscanengineering.com

ENGINEERING UNLIMITED, INC.

1320 12th Ave. North
Minneapolis, MN, U.S.A. 55411
Tel: (612) 522-4040 • (800) 515-4040
Fax: (612) 522-2829
Web: sterlingpadlocks.com

ENOSERV LLC.

7780 E 106th St
Tulsa, OK, U.S.A. 74133
Tel: (918) 622-4530 Web: www.enoserv.com



ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

5613 DTC Parkway Suite 700
Greenwood Village, CO, U.S.A. 80111-3035
Tel: (303) 520-2513 • Fax: (303) 799-6766
Web: www.enspiria.com

See ad page **22**

Enspira Solutions offers extensive experience in Smart Grid consulting, systems integration and program management. Enspira has helped over 40 utilities define and implement Smart Grid projects. Enspira is backed by parent company Black & Veatch, a leading global engineering, consulting and construction company with \$2.7 billion in annual revenue.

ENVIRONMENTAL CONSULTANTS INC. (ECI)

520 Business Park Circle
Stoughton, WI, U.S.A 53589
Tel: (800) 919-9274 • Fax: (608) 877-1172
Web: www.eci-consulting.com

EQUISALES

13811 Cullen Blvd
Houston, TX, U.S.A 77047
Tel: (713) 733-3999 • Fax: (713) 733-4122
Web: www.equisales.com

ERICO, INC.

34600 Solon Rd
Solon, OH, U.S.A 44139
Tel: (440) 248-0100
Web: www.erico.com

EXPONENTIAL ENGINEERING COMPANY

328 Airpark Drive
Fort Collins, CO, U.S.A 80524
Tel: (970) 207-9648 • Fax: (970) 207-9657
Web: www.exponentialengineering.com

F

FABRIMET INC.

4375, St-Joseph Blvd.
Drummondville, QC, CA J2B 1T8
Tel: (819) 472-1164 • Fax: (819) 478-1625
Web: www.fabrimet.com

FANTASIA ASSOCIATES INC.

225 Water St
Quincy, MA, U.S.A 02169
Tel: (617) 481-0463 • Fax: (617) 302-4074
Web: www.fantasia-associates.com

FIBER OPTICS FOR SALE CO.

775 Montague Expwy, Suite I
Milpitas, CA, U.S.A 95035
Tel: (408) 890-6299 • Fax: (408) 273-6592
Web: www.fiberoptics4sale.com

FIBER SAVVY

36595 Kevin Rd. #138-139
Wildomar, CA, U.S.A 92595
Tel: (951) 801-5780 • Fax: (951) 691-5072
Web: www.fibersavvy.com



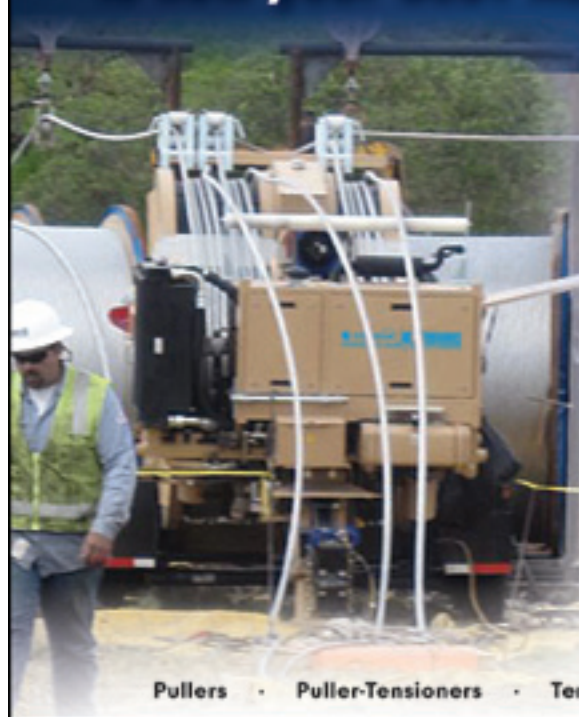
FISO TECHNOLOGIES

500 St-Jean-Baptiste Avenue Suite 195
Quebec, QC, CA G2E 5R9
Tel: (418) 688-8065 X 241 • Fax: (418) 688-8067
Web: www.fiso.com

Fiso Technologies designs and markets fiber optic sensors and high-precision measuring instruments for challenging applications. Many years of experience in real-time winding hot spot temperature monitoring for oil-filled transformers, gives the company a leading position. Its proven technology allows Fiso to monitor temperature for all types of transformers.

The BEST EQUIPMENT in the Field

is now your BEST ASSET on the books.



Maximize Fleet Asset Utilization

Improve productivity and efficiency with safe, reliable, and versatile stringing equipment from Condux Tesmec. The Condux Tesmec line of equipment covers the widest range of stringing applications, helping you maximize fleet asset utilization.

Choose total stringing equipment solutions from Condux Tesmec.

1-877-854-1750

www.conduxtesmec.com



Pullers • Puller-Tensioners • Tensioners • Reel Stands • Blocks • Pulling Rope



FLEX-CORE

FLEX-CORE DIV.

6625 McVey Blvd.
Columbus, OH, U.S.A. 43235
Tel: (614) 889-6152 • Fax: (614) 876-8538
Web: www.flex-core.com

Flex-Core is a leading manufacturer of split-core and solid-core current transformers, potential transformers, electrical transducers for ac and dc applications, signal conditioners, panel meters, terminal blocks, isolating relays, shunts, and accessories.

FLEXI-SHELF SYSTEMS

C4-233 Cross Avenue, Suite 171
Oakville, ON, CA L6J 2W9
Tel: (905) 337-0939
Web: www.flexi-shelf.com

FLIR COMMERCIAL SYSTEMS INC.

27700 SW Parkway Ave
Wilsonville, OR, U.S.A. 97070
Tel: 503.498.3293
Web: www.flirsystems.com

FMI CORPORATION

5171 Glenwood Avenue
Raleigh, NC, U.S.A. 27612
Tel: (919) 785-8400
Web: www.fminet.com

FORESIGHT PRODUCTS. LLC

6430 East 49th Drive
Commerce City, CO, U.S.A. 80022
Tel: (800) 325-5360 • Fax: (303) 287-3866
Web: www.earthanchor.com

G

GALVAN INDUSTRIES, INC.

P.O. Box 369; 7320 Millbrook Road
Harrisburg, NC, U.S.A. 28075-0369
Tel: (704) 455-5102 • Fax: (704) 455-5215
Web: www.galvanelectrical.com



GARRETTCOM INC.

213 Hammond Ave.
Fremont, CA, U.S.A. 94539
Tel: (510) 438-9071 • Fax: (510) 438-9072
Web: www.garrettcom.com
See ad page 10

Contact GarrettCom for information on substation-hardened networking products. Ask us about NERC CIP cyber-security compliance in substation networks with the Magnum Secure Networking Framework (MSNF): Secure WAN perimeter, serial and Ethernet port security, access control, video surveillance, network reliability, legacy non-routable protocol solutions, and more.

GDS ASSOCIATES, INC.

1850 Parkway Place Suite 800
Marietta, GA, U.S.A. 30067
Tel: (770) 425-8100 • Fax: (770) 426-0303
Web: www.gdsassociates.com

GENERAL CABLE COMPANY

590 Barmac Drive
North York, ON, CA M9L 2X8
Tel: (416) 756-7225 • Fax: (416) 756-1713
Web: www.generalcable.com



GENERAL PHYSICS (GP)

6700 Alexander Bell Drive
Columbia, MD, U.S.A. 21046
Tel: (410) 290-2446 • Fax: (410) 290-2481
Web: www.gpworldwide.com

See ad page 15

GP has over 40 years of experience creating training programs for the energy industry. GP is one of the few training providers that employ compliance readiness experts who are adept in both assessing your program and knowing the steps needed to remediate any issues that are identified.

GEORGE M. FRASER LTD (PICKERING)

1815 Ironstone manoir Unit #11
Pickering, ON, CA L1W 3V9
Tel: (905) 420-6555 • Fax: (905) 420-4333
Web: www.gmfraser.com

GLOBAL TRAINING SOLUTIONS INC.

P.O. Box 26067, 3163 Winston Churchill Blvd.
Mississauga, ON, CA L5L 5W7
Tel: (416) 806-5777
Web: www.globaltrainingsolutions.ca

GOLIGHT INC

37146 Old Highway 17
Culbertson, NE, U.S.A. 69024
Tel: (308) 278-3131 • Fax: (308) 278-2525
Web: www.golight.com

GOTHAM

1266 West Paces Ferry Road • Suite 200
Atlanta, GA, U.S.A. 30327
Tel: (800) 963-1539 • Fax: (800) 963-1569
Web: www.gothamusa.com

GRANZOW INCORPORATED

2300 Crownpoint Executive Drive
Charlotte, NC, U.S.A. 28227
Tel: (704) 845-0223 • Fax: (704) 845-2301
Web: www.granzow.com

H



H & L INSTRUMENTS

34 Post Road P.O. Box 580
North Hampton, NH, U.S.A. 03862-0580
Tel: (603) 964-1818 • Fax: (603) 964-8881
Web: www.hlinstruments.com

See ad page 42

H&L Instruments manufactures point-to-point modems, digital I/O relays, and protocol-transparent transceivers for DA, secondary networks, Ethernet to SCADA master, substation networks and protection relays. Ethernet, RS-232/RS-485, data communication, video and voice, providing reliable SCADA, up to 127 independent virtual network channels on multi-drop, bi-directional, redundant rings.

HAMMOND POWER SOLUTIONS INC.

595 Southgate Drive
Guelph, ON, CA N1G 3W6
Tel: (519) 822-2441 • Fax: (519) 822-9701
Web: www.hammondpowersolutions.com

HART ENERGY CONSULTING - ELECTRIFICATION OF TRANSPORT STUDIES

1616 S.Voss, Suite 1000
Houston, TX, U.S.A. 77079
Tel: (713) 260-6400
Web: www.hartenergyconsulting.com



HASTINGS FIBERGLASS PRODUCTS INC.

770 Cook Road P.O. Box 218
Hastings, MI, U.S.A. 49058-0218
Tel: (269) 945-9541 • Fax: (269) 945-4623
Web: www.hfgp.com

See ad page 19

Since 1959, Hastings has pioneered design and fabrication of fiber glass products and tools for the electrical power and communications industries.

HELIX UNIFORMED LTD

1600 46th Avenue
Lachine, QC, CA H8T 3J9
Tel: (514) 828-0057 • Fax: (514) 828-0070
Web: www.helix-uni.ca

**HERCULES INDUSTRIES INC.**

P.O. Box 197
Prospect, OH, U.S.A. 43342
Tel: 1-800-345-2590 • Fax: (740) 494-2274
Web: www.herculock.com

See ad page **115**

Hercules Industries bring you the complete line of the **HERCULOCK** all brass padlocks. Crafted out of solid brass to withstand harsh environments. Locks can be keyed alike, differently, or to and to your existing key. This includes your existing MasterLock, ABUS and CISA key. Made in the USA.

**HIGH VOLTAGE INC.**

31 County Rt. 7A
Copake, NY, U.S.A. 12516
Tel: (518) 329-3275 • Fax: (518) 329-3271
Web: www.hvinc.com

See ad page **35**

Manufacturer of portable VLF .1Hz Sinewave AC hipots for cable testing from 28kV to 200kV; AC 50/60Hz. portable hipots to 200kV; dc hipots to 300kV dC; cable fault locators and combination VLF/Thumper to 36kV with controlled energy outputs; aerial lift testers to 200kV AC; oil dielectric testers to 100kV and Tan delta bridge for diagnostic cable tests.

HIPOTRONICS INC.

P.O. Box 414, 1650 Route 22 North
Brewster, NY, U.S.A. 10509
Tel: (845) 279-3644 • Fax: (845) 279-2467
Web: www.hipotronics.com

HOLOPHANE

3825, Columbus Road SW Building A
Granville, OH, U.S.A. 43023
Tel: (740) 345-9631 • Fax: (740) 349-4426
Web: www.holophane.com

HP EXSTREAM

810 Bull Lea Run
Lexington, KY, U.S.A. 40511
Tel: (866) 318-5925
Web: www.hpexstream.com

**HUBBELL POWER SYSTEMS INC.**

210 North Allen
Centralia, MO, U.S.A. 65240-1395
Tel: (573)-682-5521 • Fax: (573) 682-8714
Web: www.hubbellpowersystems.com

Hubbell Power Systems, Inc. manufactures a wide variety of transmission, distribution and substation products including construction, switching and protection products, insulators, arresters, connectors, hot line tools, pole line hardware, cable accessories and underground enclosures. Brands include Anderson, Chance, Fargo, Hubbell, Ohio Brass and Quazite.



Transmission & Distribution Materials • Asian FRP • Timber Bridges

HUGHES BROTHERS INC.

210 North 13th Street
Seward, NE, U.S.A. 68434
Tel: (402) 643-2991 • Fax: (402) 643-2149
Web: www.hughesbros.com

See ad page **53**

Since 1921, Hughes Brothers, Inc. has been a leading manufacturer of distribution and transmission framing and pole line hardware. Wood, steel or fiberglass material up to 345kv. Custom manufacturing and engineering available

HV TECHNOLOGIES INC.

8526 Virginia Meadows Drive
Manassas, VA, U.S.A. 20109
Tel: (703) 365-2330 • Fax: (703) 365-2331
Web: www.hvtechnologies.com

I.C.M.I (INDUCTIVE COMPONENTS MFG., INC)

1200 Ferris Road
Amelia, OH, U.S.A. 45102
Tel: (513) 752-4731 • Fax: (513) 752-4738
Web: www.icmiinc.com

ICX DAQ ELECTRONICS

262 B Old New Brunswick Road
Piscataway, NJ, U.S.A. 08854
Tel: (732) 981-0050 • Fax: (732) 981-0058
Web: www.daq.net

IEC & ASSOCIATES

2474-108 Walnut Street
Cary, NC, U.S.A. 27518
Tel: (919) 828-6755
Web: www.ieca-inc.com

IMBIBITIVE TECHNOLOGIES

8 Hiscott Street, Suite # 1
St. Catharines, ON, CA L2R 1C6
Tel: (888) 843-2323 • Fax: (877) 439-2323
Web: www.imbiberbeads.com

INDEPENDENT CONTRACTOR FOR WEST MONROE PARTNERS

175 W. Jackson, Ste 2200
Chicago, IL, U.S.A. 60604
Tel: (630) 915-0326
Web: www.westmonroepartners.com

INNER-TITE**INNER-TITE CORP.**

110 Industrial Drive
Holden, MA, U.S.A. 01520
Tel: (508) 829-6361 • Fax: (508) 829-4469
Web: www.inner-tite.com

See ad page **48**

Inner-Tite Corp. is the leading manufacturer of security devices sold exclusively to electric, gas, water and telecommunications utility companies. Our comprehensive line of Locking Devices, Meter Seals and Mechanical Accessories are regarded as the highest quality and are used worldwide to secure a variety of meters and enclosures.

INOLECT, LLC

9330 North Interstate
Baton Rouge, LA, U.S.A. 70809
Tel: (225) 751-7535 • Fax: (225) 751-7536
Web: www.inolect.com

INSTRUMENT TRANSFORMER EQUIPMENT CORPORATION

PO Box 23088
Charlotte, NC, U.S.A. 28227
Tel: (704) 282-4331 • Fax: (704) 283-3017
Web: www.itec-ctvt.com

INSULBOOT A DIV. OF PLASTIC DIP MOLDINGS

PO Box 450
Plumsteadville, PA, U.S.A. 18949
Tel: (215) 766-2020 • Fax: (215) 766-2222
Web: www.insulboot.com

INTELLIMETER CANADA INC.

1125 Squires Beach Road
Pickering, ON, CA L1W 3T9
Tel: (905) 839-9199 • Fax: (905) 839-9198
Web: www.intellimeter.on.ca

INTERGRAPH CORPORATION

61 Inverness Drive East 102
Englewood, CO, U.S.A. 80112
Tel: (303) 785-9835 • Fax: (303) 799-8159
Web: www.intergraph.com

ION PHYSICS CORP.

373 Main Street, P.O. Box 165
Fremont, NH, U.S.A 03044
Tel: (603) 895-5100 • Fax: (603) 895-5101
Web: www.ionphysics.com

IPT COMPANY

P.O. Box 12803
St. Petersburg, FL, U.S.A 33733
Tel: (727) 543-4601
Web: www.iptcompany.com

I-STOP SERVICE CORPORATION

17506 Auten Road
Granger, IN, U.S.A 46530
Tel: (574) 247-9649 • Fax: (888) 529-8710
Web: www.istopservicecorp.com

J

JS HARDWARE / DOUBLETREE SYSTEMS

4030 Moorpark Avenue, Ste. 222
San Jose, CA, U.S.A 95117
Tel: (408) 850-1416
Web: www.js-hardware.com

K

KALKITECH

9900 Westpark Dr. Suite 283
Houston, TX, U.S.A 77063
Tel: (832) 331-1571
Web: www.kalkitech.com

KEYSTONE ELECTRICAL MANUFACTURING COMPANY

2511 Bell Avenue
Des Moines, IA, U.S.A 50321
Tel: (515) 661-2775 • Fax: (515) 283-0418
Web: www.keystoneemc.com

KINECTRICS INC.

800 Kipling Ave., Unit 2
Toronto, ON, CA M8Z 6C4
Tel: (416) 207-6000 • Fax: (416) 207-6532
Web: www.kinectrics.com

**KRENZ & COMPANY INCORPORATED**

P.O. Box 187
Germantown, WI, U.S.A 53022
Tel: (262) 255-2310 • Fax: (262) 255-2904
Web: www.krenzvent.com

For over 75 years, Krenz & Company has been the industry leader for Transformer Cooling Fans and Accessories. Krenz & Company maintains an extensive inventory in order to provide superior service to our customers. All of our products are quality engineered and performance tested to assure you of dependable service. Krenz products are made in the U.S.A.

L

LAKEVIEW METALS, INC.

905 Anita Avenue
Waterford, IL, U.S.A 60002
Tel: (847) 838-9800 • Fax: (847) 838-9806
Web: www.lvmetals.com

**LEM PRODUCTS INC.**

PO Box 190, 4089 Landisville Road
Doylestown, PA, U.S.A 18901
Tel: 215-348-9900 • Fax: 215-348-1414
Web: www.lemproductsinc.com

LEM Products Inc., a VBE certified company, is a leading manufacturer of industrial identification products for over 44 years and manufacturers over 140,000 products including wire markers, cable markers, voltage markers, lock out tags, inspection tags, self-laminating tags, equipment labels, barcode labels, pipe marking and specializes in custom printed products.

LIDAR SERVICES INTERNATIONAL INC.

400, 3115-12 St NE
Calgary, ALBERTA, CA T2E 7J2
Tel: (403) 517-3132 • Fax: (403) 291-5390
Web: www.lidarservices.ca

LIGHT SOURCE UNLIMITED

980 Corporate Woods Parkway
Vernon Hills, IL, U.S.A 60061
Tel: (224) 543-4003 • Fax: (224) 543-4040
Web: www.lightsourceunlimited.com

LIVEDATA, INC.

810 Memorial Drive
Cambridge, MA, U.S.A 02139
Tel: (617) 576-6900
Web: www.livedata.com

LOCKHEED MARTIN

2275 Research Boulevard
Rockville, MD, U.S.A 20850
Tel: (610) 354-2538
Web: www.lockheedmartin.com

**LOCWELD INC.**

50 Iberville
Candiac, QC, CA J5R 1J5
Tel: (450) 659-9661 • Fax: (450) 444-3111
Web: www.locweld.com

In having over 65 years of tower design and fabrication experience to offer, **LOCWELD** is the leading reference in the transmission tower industry. We continuously provide our quality structures, both lattice and tubular, to clients throughout North America given our strong «ONE TEAM» philosophy and long-term vision towards making a project a success for all involved.

LONGVIEW ADVANTAGE CORPORATION

360 Deerhide Crescent
Toronto, ON, CA M9M 2Y6
Tel: 866-514-8030, ext 7576
Web: www.longviewadvantage.com

LOR MANUFACTURING CO., INC.

7131 W. Drew Rd.
Weidman, MI, U.S.A 48893
Tel: (989) 644-2581
Web: www.lormfg.com

LUMASENSE TECHNOLOGIES

3033 Scott Blvd.
Santa Clara, CA, U.S.A 95054
Tel: (408) 727-1600 • Fax: (408) 727-1677
Web: www.lumasenseinc.com

M

MACKAY COMMUNICATIONS

3691 Trust Drive
Raleigh, NC, U.S.A 27615
Tel: (919) 850-3100 • Fax: (919) 954-1707
Web: www.mackaysatellite.com



MacLean Power Systems

MACLEAN POWER SYSTEMS

11411 Addison Ave
Franklin Park, IL, U.S.A 60131
Tel: (847) 455-0014 • Fax: (847) 455-0029
Web: www.macleanpower.com
See ad page 27

MacLean Power Systems is a leading manufacturer of products used by utilities for building transmission and distribution lines and substations. Product families include hardware, connector, insulation and protection products. Our business model supports local manufacturing for high service levels, diversity development programs and also sustainability and green initiatives.

MACNAIR CONSTRUCTION PRODUCTS LTD

7732 69 Street
Edmonton, ALBERTA, CA T6B 2J7
Tel: (780) 463-0050 • Fax: (780) 463-0531
Web: www.mcpl.ca

MACROSOFT INC.

2 Sylvan Way
Parsippany, NJ, U.S.A 07054
Tel: (973) 795-8405
Web: www.resources-ondemand.com



MAGNETECH INDUSTRIAL SERVICE

800 Nave Road SE
Massillon, OH, U.S.A. 44646
Tel: 330-830-3500 • 800-837-1614
Fax: 330-830-3522
Web: www.magnetech.com

Inspection, testing, repair, rebuild/rewind of ac/dc motors & generators, circuit breakers, switchgear, transformers, turbines; PdPM services; field services; on-site bus fabrication; dry ice cleaning.
www.magnetech.com Call 800-837-1614 or email info@magnetech.com.

MANITOBA HVDC RESEARCH CENTRE

211 Commerce Drive
Winnipeg, MANITOBA, CA R3P 1A3
Tel: (204) 989-1240 • Fax: (204) 989-1277
Web: www.pscad.com

MATROX GRAPHICS INC.

1055 St. Regis
Dorval, QC, CA H9P 2T4
Tel: (514) 822-6000
Web: www.matrox.com/graphics

MAUELL CORPORATION

31 Old Cabin Hollow Rd.
Dillsburg, PA, U.S.A 17019
Tel: (717) 432-8686 • Fax: (717) 432-8688
Web: www.mauell-us.com

MEGGER

4271 Bronze Way
Dallas, TX, U.S.A. 75237-1088
Tel: (214) 333-3201 • Fax: (214) 331-7379
Web: www.megger.com

MENTOR ENGINEERING

#10 -2175 29th St NE
Calgary, ALBERTA, CA T1Y 7H8
Tel: (403) 777-3760 • Fax: (403) 777-3769
Web: www.mentoreng.com



MERSEN CANADA

88 Horner avenue
Toronto, ON, CA M8Z 5Y3
Tel: (416) 252-9371 • Fax: (416) 252-9245
Web: www.mersen.com

See ad page 115

Mersen Canada Toronto Inc. is a Canadian manufacturer providing circuit protection solutions for industry. Safety is the number 1 concern, and with this in mind, additional products offered include, switches, High Power switches, Medium voltage fuses, Power Resistors, Electronic components, enclosures and Engineered Solutions for the toughest of customer demands.

MESSERSTROM, INC.

1590 Fenpark Drive
Fenton, MO, U.S.A 63026
Tel: (636) 680-5978 • Fax: (636) 680-5999
Web: www.messerstrom.com

MITSUBISHI ELECTRIC POWER PRODUCTS, INC.

530 Keystone Drive
Warrendale, PA, U.S.A 15086
Tel: (724) 778-3115
Web: www.meppi.com

MJ HARDEN

5700 Broadmoor 800
Mission, KS, U.S.A. 66202
Tel: 913-981-9522
Web: www.mjharden.com



MOLONEY ELECTRIC, INC.

35 Leading Road
Toronto, ON, CA M9V 4B7
Tel: (416) 534-9226 • Fax: (416) 534-6906
Web: www.moloneytx.com

Moloney Electric has over a century of excellence and innovation in the design and manufacture of reliable, high quality liquid filled transformers. We continue to be innovative in providing cost effective solutions to our customers with thousands of different transformer applications. We have expanded our product range from 0.5 to 10,000 kVA.

MP HUSKY LLC

204 Old Piedmont Highway
Greenville, SC, U.S.A 29690
Tel: (864) 234-4800 • Fax: (864) 234-4822
Web: www.mphusky.com



MVA POWER INC

1, Holly Road
Montréal, Québec, CA H3X 3K6
Tel: (450) 589-0445
Web: www.mvapower.qc.ca

See ad page 28

MVA Power specializes in the detailed design, manufacture of medium / high voltage substations, distribution, and transmission lines including the supply of HV/MV equipment, hardware, grounding, B.O.P for electrical power distribution & electrification networks and accessories. MVA also provides engineering services, detail design, budget pricing, EPC, testing and commissioning.

N

NANJING ELECTRIC / DOUBLETREE SYSTEMS

4030 Moorpark Avenue, Ste. 222
San Jose, CA, U.S.A 95117
Tel: (408) 850-1416
Web: www.nanjing-insulators.com

NASCO INDUSTRIES INC.

3 N.E. 21st Street
Washington, IN, U.S.A 47501
Tel: (812) 254-7393 • Fax: (812) 254-6476
Web: www.nascoinc.com

NATIONAL SAFETY APPAREL

3865 West 150th Street
Cleveland, OH, U.S.A 44111
Tel: (800) 553-0672
Web: www.nsamfg.com

NAVIGANT

1801 K Street, NW, Suite 500
Washington, DC, U.S.A 20006
Tel: (202) 481-7336
Web: www.navigant.com



NECS-NATIONAL ENERGY CONTROL SERVICES

550 West 36th Street
Jasper, IN, U.S.A. 47546
Tel: 812-634-1413 • Fax: 812-482-1598
Web: www.necssolutions.com

NECS® provides a wide variety of fleet solutions... including traction™, Driver Safety Management, a new and unique driver behavior-based solution developed in response to the Federal Motor Carrier Safety Administration's (FMCSA) recently implemented Compliance, Safety, Accountability (CSA 2010) program. For more information about NECS®, please visit www.NECSolutions.com and www.drivertraction.com.



NEOPTIX FIBER OPTIC SENSORS

1415 rue Frank-Carrel Suite 220
Quebec, QC, CA G1N 4N7
Tel: (418) 687-2500 • Fax: (418) 687-2425
Web: www.neoptix.com

See ad page **Strip Front Cover**

Neoptix Fiber Optic Sensors provides a complete range of fiber optic monitoring equipment for true and direct winding temperature monitoring of dry and oil-filled transformers. Neoptix temperature probes are ruggedized and designed to withstand manufacturing (procedures) tough environments, heat run tests and long term measurement reliability. Monitoring systems are available with 1 to 512 channels, with most common communication protocols including serial, Ethernet, MODBUS, DNP 3.0 and IEC 61850.



NESCO SALES AND RENTALS

3112 East State Road 124
Bluffton, IN, U.S.A. 46714
Tel: (260) 824-6340 • 1-800-252-0043
Fax: (260) 824-6350
Web: www.nescosales.com

See ad page **111**



NOVATECH, LLC

11500 Cronridge Drive Suite 110
Owings Mills, MD, U.S.A. 21117
Tel: (410) 753-8300 • (800) 253-3842
Fax: (410) 581-2107
Web: www.novatechweb.com

See ad page **Inside Front Cover**

NovaTech is a world-class SCADA and Substation Automation products and engineering services provider with over 3,000 RTUs and automation systems installed worldwide. Products include the Orion Substation Automation Platform and Bitronics Measurement Products. Design, engineering and fabrication services available. Solutions combine open, flexible designs with deployment and configuration tools that hide complexity.



NOVINIUM

34110 9th Avenue South, Suite B
Federal Way, WA, U.S.A. 98003
Tel: (206) 529-4828 • Fax: (206) 774-9754
Web: www.novinium.com

Novinium, the technology leader in power cable restoration, can extend URD, Feeder, and Submarine cable life an additional 40 years. The installation is safe, and the injected fluid acts quickly. Don't replace older power cables. Rejuvenate them for less than one-half the cost of replacement. Your underground cables are a Renewable Resource.

Contact Rich Brinton (206) 529-4828
rich.brinton@novinium.com



OLAMETER INC.

2212 Arlington Downs Road Suite 102
Arlington, TX, U.S.A. 76011
Tel: (800) 903-7003 • Fax: (877) 864-2831
Web: www.olameter.com



OLDCASTLE ENCLOSURE SOLUTIONS – PLASTIBETON

Tel: 888-868-5214
Web: www.oldcastleprecast/enclosures

See ad page **12**

Oldcastle Enclosure Solutions is one of the most innovative and largest manufacturers of enclosure products produced from plastics, polymers and concrete. OPES uses leading-edge technology to design, manufacture and supply enclosure products for the protection of municipal water, irrigation, electric, telecommunications, cable and transportation infrastructures.



OLDCASTLE PRECAST – TRUFIRE WALL

Tel: 888-965-3227
Web: www.oldcastleprecast.com

See ad page **37**

Oldcastle Precast, Inc. is the leading manufacturer of precast and polymer concrete products in the U.S. Providing engineered product solutions nationwide to a number of market sectors including: Building Structures, Communications, Government/Military, Power & Energy, Security, Transportation, and Water. With locations nationwide, our products are always close at hand.



OMICRON ELECTRONICS CORP. USA

230 Third Avenue
Waltham, MA, U.S.A. 02451
Tel: 1-781-672-6200 • 1-800-omicron
Web: www.omicronusa.com

OMICRON develops innovative power system testing solutions: CMC256 for relay, transducer & meter testing (including IEC 61850); CPC100 for automated substation testing of CT's, VT's, power transformers & resistances, CP-TDI for power factor testing, CP-CUI for line impedance measurement; CTAnalyzer; FRAnalyzer sweep frequency response analyzer and MPD600 partial discharge analyzer

OMICRON ELECTRONICS CORP. USA (WALTHAM)

230 Third Avenue
Waltham, MA, U.S.A. 02451
Tel: (781) 672-6200 • 1-800-OMICRON
Web: www.omicronusa.com



OPEN SYSTEMS INTERNATIONAL, INC.

3600 Holly Lane North, Suite 40
Minneapolis, MN, U.S.A. 55447-1286
Tel: (763) 551-0559 • Fax: (763) 551-0750
Web: www.osii.com

See ad page **1**

Open Systems International, Inc. (OSI) (www.osii.com) provides open, state-of-the-art and high-performance automation solutions to utilities worldwide, consistently delivering unmatched product openness, price, functionality and total customer satisfaction. OSI's innovative, industry leading solutions include Supervisory Control and Data Acquisition (SCADA) Systems, Network Management Systems (NMS), Energy Management Systems (EMS), Distribution Management Systems (DMS) and Generation Management Systems (GMS), as well as individual software and hardware products and Smart Grid solutions for utility operations.

OPTIMUM ENERGY PRODUCTS LTD.

333 - 11979 40 St. SW
Calgary, AB, CA T2Z 4M3
Tel: (877) 766-5412
Web: www.optimumenergy.com

ORACLE

500 Oracle Parkway
Redwood Shores, CA, U.S.A. 94065
Tel: 1.800.ORACLE
Web: www.oracle.com

OSMOSE UTILITIES SERVICES, INC.

980 Ellicott St.
Buffalo, NY, U.S.A. 14209
Tel: (716) 319-3423 • Fax: (716) 882-7822
Web: www.osmoseutilities.com

OX CREEK ENERGY

P.O. Box 600
Montebello, WI, U.S.A. 53949
Tel: (608) 589-5513 • (800) 531-6232
Fax: (608) 589-5509
Web: www.ox-creek-energy.com

OX CREEK ENERGY ASSOC INC - SPECIALIZED CAMERA SALES

PO Box 162
Kewaunee, WI, U.S.A. 54216
Tel: (800) 531-6232 • Fax: (805) 800-0744
Web: www.specialcamera.com

P

PARADIGM 2 TECHNICAL SOLUTIONS, LLC

113 Ardmore
Middletown, OH, U.S.A. 45042
Tel: (513) 403-9898 • Fax: (513) 425-9964
Web: www.paradigm2techsolutions.com

PARADOXE CORPORATION

33 Old Hickory Boulevard
Jackson, TN, U.S.A. 38305
Tel: (731) 664-4345 • Fax: (731) 891-9433
Web: www.pxecorp.com

PATTERSON & DEWAR ENGINEERS

850 Center Way
Norcross, GA, U.S.A. 30071
Tel: (770) 453-1410 • Fax: (770) 453-1411
Web: www.pd-engineers.com

**PCORE ELECTRIC COMPANY, INC.**

135 Gilbert Street
LeRoy, NY, U.S.A. 14482
Tel: (585) 768-1200 • Fax: (585) 768-1212
Web: www.pcoreelectric.com

PCORE Electric, North America's only company 100% focused on the manufacturing of capacitance graded bushings, and related components, offers a wide range of products; 15kV-69kV PRC® Bushings, 25kV-500kV POC® Bushings, and 25kV GSU Bushings. Our time and cost-saving products include PCORE® Test Terminals, Bushing Repair, and the patented Quick Link Bushing™.

PENTA INDUSTRIAL CORP.

10276 Bach Boulevard
St. Louis, MO, U.S.A. 63132
Tel: (314) 878-0143 • Fax: (314) 878-0166
Web: www.penta.net

**PETRO CANADA**

2310 Lakeshore road West
Mississauga, ON, CA L5J 1K2
Tel: (800) 268-5850

Petro-Canada offers electrical insulating oils that use ultra-pure severely hydrotreated iso-paraffin base fluids. These fluids meet or exceed the performance requirements of CSA-C50 (Class A and B) and ASTM D3487, among others. They are currently the ONLY fluids in the Canadian market that meet the new Class A Type III and Type IV special requirements recently introduced by the CSA.

PHASECO, INC.

P.O. Box 73069
Houston, TX, U.S.A. 77273
Tel: (281) 893-7522 • Fax: (281) 893-9024
Web: www.phaseco.com

**PHENIX TECHNOLOGIES INC.**

75 Speicher Drive
Accident, MD, U.S.A. 21520
Tel: (301) 746-8118 • Fax: (301) 895-5570
Web: www.phenixtech.com

See ad page 13

Phenix Technologies is a manufacturer and global supplier of state-of-the-art high voltage, high current, high power test systems and components for testing circuit breakers, reclosers, transformers, rotating electric machinery, cables, switchgear, rubber goods/protective gear, and field/maintenance testing with over 30 years experience, and ISO9001 quality certification.

PHILADELPHIA GEAR

901 E. 8th Ave.
King of Prussia, PA, U.S.A. 19406
Tel: (610) 265-3000
Web: www.philagear.com

**POLYCAST INTERNATIONAL**

965 Sherwin Road
Winnipeg, MB, CA R3H 0T8
Tel: (204) 632-5428 • Fax: (204) 697-0314
Web: www.polycastinternational.com

Since 1972, Polycast has focused on becoming an industry leader in the design and manufacture of epoxy cast components for the hydro-electric industry. We have continually overcome the challenges, obstacles and stereotypes faced within the industry, to emerge as a supplier of quality engineered products for a variety of industries.

POSITRON INC.

5101 Buchan Street Suite 220
Montreal, QC, CA H4P 2R9
Tel: (514) 345-2220 • Fax: (514) 345-2271
Web: www.positronpower.com

POWEL INC.

930 Blue Gentian Road, Suite 1300
St. Paul, MN, U.S.A. 55121
Tel: (651) 251-3005 • Fax: (651) 251-3006
Web: www.powelinc.com

POWER CORE ENGINEERING, INC.

2821 North 4th Street; MEC Suite #223, Dept. #56
Milwaukee, WI, U.S.A. 53212-2366
Tel: (414) 263-3455
Web: www.pce.com

POWER LINE SYSTEMS, INC.

610 N. Whitney Way
Madison, WI, U.S.A. 53705
Tel: (608) 238-2171 • Fax: (608) 238-9241
Web: www.powline.com

POWERSECURE, INC

1609 Heritage Commerce Ct
Wake Forest, NC, U.S.A. 27587
Tel: (919) 604-7646 • Fax: (919) 562-7213
Web: www.powersecure.com

POWERTECH LABS INC

12388 88 avenue
Surrey, BRITISH COLUMBIA, CA V3W 7R7
Tel: (604) 590-7446 • Fax: (604) 590-7455
Web: www.powertechlabs.com

PREDICTIVEMETRICS, INC.

106 Apple Street, Suite 303
Tinton Falls, NJ, U.S.A. 07724
Tel: (732) 530-9303 • Fax: (732) 933-9267
Web: www.predictivemetrics.com

PREFORMED LINE PRODUCTS

660 Beta Drive
Mayfield Village, OH, U.S.A. 44143
Tel: (440) 461-5200
Web: www.preformed.com

PRIMARY POWER GROUP

205 MacKenzie Ave
 Ajax, ON, CA L1S 2G1
 Tel: (905) 426-2952 • Fax: (905) 426-6016
 Web: www.primarypowergroup.com

PRIMATE TECHNOLOGIES

#184, 4100, N. Wickham Rd. Ste 102
 Melbourne, FL, U.S.A. 32935
 Tel: 321-821-2227 • Fax: 912-231-1683
 Web: www.primate-tech.com

PRIMO INSTRUMENT INC.

4407, Charlevoix
 Montreal, QC, CA H1H 1T6
 Tel: (514) 329-3242 • Fax: (514) 329-3750
 Web: www.primoinc.com

PRIMUS CABLE

24335 Prielipp Road, # 128
 Wildomar, CA, U.S.A. 92595
 Tel: (951) 691-5025
 Web: www.primuscable.com

PROMETEK INC.

1005 Nordique Ave
 Quebec, QC, CA G1C 0C7
 Tel: (418) 527-4445
 Web: www.prometek.net

PUPI DIVISION, GEOTEK

1421 Second Ave NW
 Stewartville, MN, U.S.A. 55976
 Tel: (800) 533-1680
 Web: www.pupicrossarms.com

Q

QEI INC.

60 Fadem Road
 Springfield, NJ, U.S.A. 07081
 Tel: (908) 512-3699 • Fax: (973) 379-2138
 Web: www.qeiinc.com

QPS PHOTRONICS INC

217 St. Louis Ave
 POINTE CLAIRE, QC, CA H9R 5L7
 Tel: (514) 697-4728 • Fax: (514) 697-8693
 Web: www.qpsconditionmonitoring.com

**QUANTA SERVICES**

2800 Post Oak Blvd. Suite 2600
 Houston, TX, U.S.A. 77056
 Tel: 713-629-7600 • Fax: 713-629-7676
 Web: www.quantaservices.com

Quanta Services is the largest infrastructure service provider in the country and has the ability to handle any electrical infrastructure need anywhere in the country. Quanta designs, installs, repairs and maintains the infrastructure needed to deliver important commodities, such as electric power.

R

RADAR ENGINEERS

9535 NE Colfax Street
 Portland, OR, U.S.A. 97220
 Tel: (503) 256-3417 • Fax: (503) 256-1981
 Web: www.radarengineers.com

RADIAN RESEARCH, INC.

3852 Fortune Drive
 Lafayette, IN, U.S.A. 47921
 Tel: (765) 449-5500 • Fax: (765) 448-4614
 Web: www.radianresearch.com

**RCC ELECTRONICS**

1515 Matheson Blvd. Suite 101
 Mississauga, ON, CA L4W 2P5
 Tel: (905) 238-6848 • Fax: (905) 238-6849
 Web: www.rcce.com

RCC Electronics provides Test & Measurement solutions to the Canadian Power Utility Industry since 1978. Test equipment for Substation Maintenance, Cable Diagnostics, Power Measurement and Data Acquisition are at the core of the RCC business. Our talented staff look forward to working with you.

REDI HAUL TRAILERS

1205 N. Dewey St. / P.O. Box 803
 Fairmont, MN, U.S.A. 56031
 Tel: (800) 233-0382 • Fax: (507) 238-2603
 Web: www.redihaul.com

REEF INDUSTRIES, INC.

9209 Alameda Genoa Rd
 Houston, TX, U.S.A. 77075
 Tel: (713) 507-4251 • Fax: (713) 507-4295
 Web: www.reefindustries.com

REELCRAFT INDUSTRIES, INC.

2842 East Business Hwy. 30
 Columbia City, IN, U.S.A. 46725
 Tel: (260) 248-8188 • Fax: (260) 248-2605
 Web: www.reelcraft.com

**REINHAUSEN MANUFACTURING INC.**

ATT: CHRISTY CRAWFORD
 2549 N. 9th Avenue
 Humbolt, TN, U.S.A. 38343
 Tel: (731) 562-4127 • Fax: (731) 784-7682
 Web: www.reinhausen.com

Reinhausen Manufacturing has been the leading Load Tap Changer manufacturer for decades. But Reinhausen also offers Maintenance-Free Dehydrating Breathers, Pressure Relief Devices, TAPCON® Digital Automatic Voltage Controllers, retrofit packages, Premium Certified Service Providers and much more to bring you a complete solution for all of your transformer control needs.

REPTAME EQUIPMENT INC.

2313 Tottenham Road
 Tottenham, ON, CA L0G 1W0
 Tel: (905) 936-6979
 Web: www.reptame.com

RIPLEY LIGHTING CONTROLS

PO Box 3229
 West Columbia, SC, U.S.A. 29171
 Tel: (803) 939-4700
 Web: www.ripleylc.com

RITZ INSTRUMENT TRANSFORMERS, INC.

25 Hamburg Avenue
 Lavonia, GA, U.S.A. 30907
 Tel: (706) 376-2769 • Fax: (866) 772-5245
 Web: www.ritzusa.com

RONDAR INC.

333 Centennial Pkwy N.
 Hamilton, ON, CA L8E 2X6
 Tel: (905) 561-2808
 Web: www.rondar.com

ROSS ENGINEERING CORPORATION

540 Westchester Drive
 Campbell, CA, U.S.A. 95008
 Tel: (408) 377-4621 • Fax: (408) 377-5182
 Web: www.rossengineeringcorp.com

ROTEK INSTRUMENT CORP

390 Main Street
 Waltham, MA, U.S.A. 02452
 Tel: (781) 899-4611 • Fax: (781) 894-7273
 Web: www.rotek.com

**RTDS TECHNOLOGIES, INC.**

100-150 Innovation Drive
Winnipeg, MB, CA R3T 2E1
Tel: (204) 989-9700 • Fax: (204) 452-4303
Web: www.rtds.com

See ad page **55**

RTDS Technologies is the pioneer of real time digital simulation and is the exclusive supplier of the RTDS® Simulator. Electric power utilities, equipment manufacturers, research institutes and universities around the world use the RTDS Simulator for power system studies and closed loop testing of protection and control equipment.

RUGGEDCOM INC.

300 Applewood Crescent Unit 1
Concord, ON, CA L4K 5C7
Tel: (905) 856-5288 • (888) 264-0006
Fax: (905) 856-1995
Web: www.ruggedcom.com

S

**S&C ELECTRIC COMPANY**

6601 North Ridge Blvd.
Chicago, IL, U.S.A. 60626
Tel: (773) 338-1000 • Fax: (773) 338-2562
Web: www.sandc.com

See ad page **21**

S&C Electric Company designs and manufactures switching and protection products for electric power transmission and distribution. S&C's power-electronic products can deliver uninterrupted power for an entire facility. S&C offers a wide range of engineering, laboratory, and testing services for electric utilities and commercial, industrial, and institutional power users.

SABRE TUBULAR STRUCTURES

8653 E. Highway 67
Alvarado, TX, U.S.A. 76009
Tel: (866) 254-3707 • Fax: (817) 852-1702
Web: www.sabretubularstructures.com

SAE TOWERS, LTD.

1235 N. Loop W. Ste 200
Houston, TX, U.S.A. 77008
Tel: (281) 763-2282 • Fax: (281) 763-2283
Web: www.saetowers.com

SALAZ INC.

504-220 Duncan Mill Road
Toronto, ON, CA M3B 3J5
Tel: (647) 435-4970
Web: www.salazinc.com

SALISBURY

by Honeywell

SALISBURY BY HONEYWELL

101 E. Crossroads Parkway STE.A
Bolingbrook, IL, U.S.A. 60440
Tel: 630-343-3800 • Fax: 866-824-4922
Web: www.salisburybyhoneywell.com

Salisbury is the world's largest manufacturer of flexible insulating equipment for electrical workers. Products include, rubber insulating gloves and sleeves, line hose, hoods and covers, insulating blankets, temporary grounding and bypass jumper equipment, dielectric footwear, protective eyewear, hard hats, polymeric insulators and Arc resistant clothing meeting NFPA 70E.

**SARGENT & LUNDY LLC**

55 East Monroe Street
Chicago, IL, U.S.A. 60603
Tel: 312-269-2000 • Fax: 312-269-9697
Web: www.sargentlundy.com

Comprehensive engineering & design, project services, and energy business consulting for power delivery and power generation (fossil, nuclear, renewable energy) projects. T&D experience encompasses overhead/underground transmission and open-air/GIS substations in all voltage classes. Expertise also includes technical & economic assessment, reliability upgrades, IPP grid interconnection, implementing Smart Grid technologies, and diverse services to windfarm developers.

SATCON TECHNOLOGY CORPORATION

27 Drydock Ave.
Boston, MA, U.S.A. 02210
Tel: (888) 728-2664 Web: www.satcon.com

**SBB TOWERS**

3005 Des Batisseurs
Terrebonne, QC, CA J6Y 0A2
Tel: (450) 968-0800 • Fax: (450) 968-0050
Web: www.sbb.ca

SBB is the creator of the fast-mounting aluminum modular tower (ERS), used since 1989 by utility companies worldwide to help quickly restore power to T&D lines, as well as facilitate their maintenance. **SBB** also manufactures steel poles, lattice towers and steel structures for power substations and is ISO 9001 certified.

**SCHWEITZER ENGINEERING LABORATORIES INC.**

2350 N.E. Hopkins Court
Pullman, WA, U.S.A. 99163-5603
Tel: (509) 332-1890 • Fax: (509) 332-7990
Web: www.selinc.com

See ad page **9**

SEL serves the electric power industry worldwide through the design, manufacture, supply, and support of products and services for power system protection, monitoring, control, automation, and metering. SEL offers unmatched local technical support, a worldwide, ten-year product warranty, and a commitment to making electric power safer, more reliable, and more economical.

SEATEK COMPANY, INC.

392 Pacific Street
Stamford, CT, U.S.A. 06902
Tel: (203) 324-0067 • Fax: (203) 324-7844
Web: www.seatekco.com

SENSUS

8601 Six Forks Road Suite 700
Raleigh, NC, U.S.A. 27615
Tel: 1-800-638-3748
Web: www.sensus.com

SESCO - SYSTEMS ENGINEERING AND SALES, INC

3850 East Pontiac Street
Fort Wayne, IN, U.S.A. 46803
Tel: 260.422.1671 • 800.422.2028
Fax: 260.424.0607
Web: www.sesco-inc.com

SIEMENS ENERGY INC. T&D SERVICE SOLUTIONS

7000, Siemens Road
Wendell, NC, U.S.A. 27591
Tel: 919-365-2294 • Fax: 919-365-1394
Web: www.usa.siemens.com

SIEMENS POWER ACADEMY (SIEMENS PTI)

400 State Street
Schenectady, NY, U.S.A. 12301
Tel: (518) 395-5186 • Fax: (518) 346-2777
Web: www.usa.siemens.com/energy/pti-education

SKYGUARD, LLC

2506 Lakeland Drive Suite 403
Flowood, MS, U.S.A 39232
Tel: (866) 997-5948 • Fax: (866) 639-0200
Web: www.skyguard.com

SMA AMERICA

4031 Alvis Ct.
Rocklin, CA, U.S.A 95677
Tel: (916) 625-0870
Web: www.sma-america.com

SMARTER SECURITY SYSTEMS, LTD.

1515 S. Capital of Texas Hwy, #210
Austin, TX, U.S.A 78746
Tel: (512) 328-7277 • Fax: (512) 328-7280
Web: www.smartersecurity.com

SOLIDIFICATION PRODUCTS INTERNATIONAL, INC.

P.O. Box 35/ 524 Forest Road
Northford, CT, U.S.A 06472
Tel: (203) 484-9494 • Fax: (203) 484-9492
Web: www.oilbarriers.com

SOLIS ENERGY

927 Fern Street
Altamonte Springs, FL, U.S.A 32701
Tel: (407) 339-6786 • Fax: (407) 792-1921
Web: www.solisenergy.com

SORBWEB PLUS

85 Morrow Road
Barrie, ON, CA L4N 3V7
Tel: (866) 269-8275 • Fax: (705) 733-5053
Web: www.sorbwebplus.com

**SOUTHERN STATES, LLC.**

30 Georgia Avenue
Hampton, GA, U.S.A. 30228
Tel: (770) 946-4562 • Fax: (770) 946-8106
Web: www.southernstatesllc.com

Southern States, LLC is a world leader in the design and manufacture of high voltage switching devices. Products offered include group operated disconnects, hookstick switches, motor operators, ground switches, horizontal and "candlestick" circuit switchers, load and line switchers, capacitor switchers, reactor switchers, power fuses, and non-contact current transformers.

STACO ENERGY

301 Gaddis Blvd
Dayton, OH, U.S.A 45403
Tel: (937) 253-1191 • Fax: (937) 253-1723
Web: www.stacoenergy.com

STANLEY CONSULTANTS, INC.

8000 South Chester Street, Suite 500
Centennial, CO, U.S.A 80112-3516
Tel: (800) 553-9694 • Fax: (563) 264-6658
Web: www.stanleyconsultants.com

STATICON LTD.

5-390 Tapscott Road
Scarborough, ON, CA M1B 2Y9
Tel: (416) 291-3723
Web: www.staticon.ca

STORAGE BATTERY SYSTEMS INC

N56 W16665 Ridgewood Drive
Menomonee Falls, WI, U.S.A 53051
Tel: (262) 703-5800 • Fax: (262) 703-3073
Web: www.sbsbattery.com

STORMWATERX

122 SE 27th Ave
Portland, OR, U.S.A 97214
Tel: (800) 680-3543
Web: www.stormwaterx.com

STRIDER-RESOURCE

PO Box 290
Bond Head, ON, CA L0G 1B0
Tel: (905) 859-3901 • Fax: (905) 859-4345
Web: www.strider-resource.com

**SUPERPOWER, INC.**

450 Duane Ave.
Schenectady, NY, U.S.A. 12304
Tel: (518) 346-1414 • Fax: (518) 346-6080
Web: www.superpower-inc.com

SuperPower, Inc. develops and manufactures high temperature superconductor (HTS) wire that enables more efficient and reliable devices for the generation, transmission, distribution and storage of energy, and offers improved power quality and environmental benefits over copper-based systems. High quality and high performance wire is now available in long lengths.

**SURPLEC HV SOLUTIONS**

149 Godin
Sherbrooke, QC, CA J1R 0S6
Tel: (819) 821-3636 • (877) 996-3636
Fax: (819) 563-7517
Web: www.surplechv.com
See ad page 46

Since 1987, Surplec HV solutions offers a complete line of medium- and high-voltage products as well as repair and remanufacturing of equipment. Our team of experts can propose timely and economical solutions for your projects. Our ISO 9001 accreditation allows us to offer exceptional warranties on all our products.

SYBASE, INC.

1 Sybase Drive
Dublin, CA, U.S.A 94568
Tel: 1-800-SYBASE5 • Fax: (925) 236-5000
Web: www.sybase.com

**SYMMETRICOM**

2300 Orchard Parkway
San Jose, MA, U.S.A. 95131
Tel: 978-232-1422 • Fax: 978-927-4099
Web: www.symmetricom.com

Symmetricom is the worldwide leader in precise timing solutions. Around the globe Utilities and Telecom service providers depend on Symmetricom for secure and dependable synchronization. Symmetricom offers cost effective timing solutions for all Telecommunication, Protection, Control and Metering requirements. Find out more about our synchronization expertise at www.symmetricom.com

SYSTEMS ENGINEERING COMPANY

6475 E. Pacific Coast Hwy. #334
Long Beach, CA, U.S.A 90803
Tel: (800) 846-4539 • Fax: (209) 962-0498
Web: www.systemsengineeringcompany.net

**SYSTEMS WITH INTELLIGENCE INC.**

1215 Meyerside Drive Unit #7
Mississauga, ON, CA L5T 1H3
Tel: (289) 562-0126 • Fax: (289) 562-0152
Web: www.systemswithintelligence.com

SWI supplies intelligent video and asset monitoring solutions designed specifically for electric utilities. SWI's «substation hardened» digital video recorders and cameras, with video management software incorporating advanced video analytics technology, insures the electric utility's critical infrastructure is operating at peak efficiency and is protected against outside intrusion and disruption.

T

T & R ELECTRIC SUPPLY COMPANY INC.

P.O. Box 180
 Colman, SD, U.S.A. 57017
 Tel: (605) 534-3555 • Fax: (605) 534-3861
 Web: www.t-r.com

**TALLMAN EQUIPMENT CO**

668 South County Line Rd.
 Bensenville, IL, U.S.A. 60106
 Tel: 630-860-5666
 Web: www.tallmanequipment.com

See ad page 17

For nearly 60 years, Tallman Equipment has served those who build and maintain the electrical transmission and distribution systems that power North America. From conductor stringing & sagging to cutting & crimping and everything in between, Tallman has what you need to get the job done. For Sales, Repair and Rentals, Tallman has you covered.

TANTALUS

#190 - 1121 Situs Court
 Raleigh, NC, U.S.A. 27606
 Tel: (919) 900-8970 • Fax: (919) 900-8978
 Web: www.tantalus.com

**TC COMMUNICATIONS**

17881 Cartwright Road
 Irvine, CA, U.S.A. 92614
 Tel: (949) 852-1972 • 1-800-569-4736
 Fax: (949) 852-1948
 Web: www.tccomm.com

See ad page 3

Featuring its flagship Ethernet product, the JumboSwitch®, TC Communications specializes in communications products for Utility & SCADA networks. The JumboSwitch® integrates 13 different Ethernet, TDM, Telephone, Protective Relay, Analog, Dry Contact and Ethernet-over-PDH interfaces on one rugged, redundant IP platform. Other products include fiber optic modems, multiplexers and telephone extenders.

TECH PRODUCTS, INC.

105 Willow Avenue
 Staten Island, NY, U.S.A. 10305
 Tel: (718) 442-4900 • Fax: (718) 442-2124
 Web: www.techproducts.com

TECHNICAL SYSTEMS 2002 INC.

PO Box 650
 Waterdown, ON, CA L0R 2H0
 Tel: (866) 327-8731 • Fax: (905) 575-0386
 Web: www.technical-sys.com

TECHSOURCE THERMAL SOLUTIONS, INC.

150-P New Boston St.
 Woburn, MA, U.S.A. 01801
 Tel: (781) 939-9988 • Fax: (781) 939-9989
 Web: www.techsource.net

TELKONET

20374 Seneca Meadows Parkway
 Germantown, MD, U.S.A. 20876
 Tel: (240) 912-1800 • Fax: (240) 912-1839
 Web: www.telkonet.com

TELOGIS

85 Enterprise Suite 450
 Aliso Viejo, CA, U.S.A. 92656
 Tel: (866) 835-6447 • Fax: (866) 422-4096
 Web: www.telogis.com

TEREX UTILITIES

500 Oakwood Road
 Watertown, ND, U.S.A. 57201
 Tel: (605) 882-4000 • Fax: (605) 882-5595
 Web: www.terexutilities.com

TERRA SPECTRUM TECHNOLOGIES

PO Box 1718
 Des Moines, IA, U.S.A. 50306
 Tel: (866) 619-5444
 Web: www.terra-spectrum.com

TESHMONT CONSULTANTS LP

1190 Waverley Street
 Winnipeg, MB, CA R3T0P4
 Tel: (204) 284-8100 • Fax: (204) 475-4601
 Web: www.teshmont.com

THE FOSTER GROUP, INC.

180 N. Stetson Avenue - Suite #3660
 Chicago, IL, U.S.A. 60601
 Tel: (312) 609-1009 • Fax: (312) 609-1109
 Web: www.thefostergroup.com

THIES ELECTRICAL DISTRIBUTING CO.

43 Hilltop Drive
 Cambridge, ON, CA N1R 1T2
 Tel: (519) 621-2524 • Fax: (519) 740-1203
 Web: www.djinfo.com/tedc

**THOMAS & BETTS - STEEL STRUCTURES DIVISION**

8155 T&B Blvd.
 Memphis, TN, U.S.A. 38125
 Tel: 1-877-2TB-MEYER • Fax: 1-800-888-0690
 Web: www.meyersteelstructures.com

See ad page 11

Thomas & Betts' Meyer® Steel Structures is the industry leader for design, fabrication, and testing of tubular steel poles and steel lattice towers used in utility transmission applications. Contact us today to learn how we enable the Fastest time to Energize!

**THOMAS & BETTS - UTILITY GROUP**

8155 T&B Blvd.
 Memphis, TN, U.S.A. 38125
 Tel: 1-800-326-5282
 Web: www.utilitytnb.com

See ad page 11

Thomas & Betts serves the electric utility industry with a wide variety of products for overhead and underground transmission, substation and distribution applications. With market-leading products and brands like Elastimold®, Homac®, Joslyn Hi-Voltage™, Fisher Pierce®, Hi-Tech®, Blackburn® and Carlon®, you can count on Thomas & Betts to provide quality, reliability and performance.

**THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION**

2000 Argentia Road Plaza 5 500
 Mississauga, ON, CA L5N 2R7
 Tel: 905-858-1010, x3782 • Fax: (905) 858-4459
 Web: www.meyersteelstructures.com

See ad page 11

Thomas & Betts' Meyer® Steel Structures is the industry leader for design, fabrication, and testing of tubular steel poles and steel lattice towers used in utility transmission applications. Contact us today to learn how we enable the Fastest time to Energize!

**THOMAS & BETTS CANADA - UTILITY DIVISION**

700 Thomas Avenue
 Saint-Jean-sur-Richelieu, Québec, CA J2X 2M9
 Tel: (450) 466-1102, x234 • 1-800-466-1102, x234
 Fax: (450) 466-1163
 Web: www.tnb.ca

See ad page 11

Thomas & Betts serves the electric utility industry with a wide variety of products for overhead and underground transmission, substation and distribution applications. With market-leading products and brands like Elastimold®, Homac®, Joslyn Hi-Voltage™, Fisher Pierce®, Hi-Tech®, Blackburn® and Carlon®, you can count on Thomas & Betts to provide quality, reliability and performance.

TOUCHLOGIC

30 Kinnear Court Suite 202
Richmond Hill, ON, CA L4B1K8
Tel: (905) 707-0207 • Fax: (866) 815-3218
Web: www.touchlogic.com

TOWER DRAFTING SERVICES, INC.

4739 Butler Street
Pittsburgh, PA, U.S.A 15201
Tel: (412) 682-7618 • Fax: (412) 682-6806
Web: www.towerdraft.com

TRANSAMERICAN POWER PRODUCTS, INC.

2427 Kelly Ln
Houston, TX, U.S.A 77066
Tel: (281) 444-8277
Web: www.tappinc.com

TRANSDATA, INC.

2560 Tarpley Road
Carrollton, TX, U.S.A 75006
Tel: (972) 418-7717 • Fax: (972) 418-7774
Web: www.transdatainc.com

**TRANTECH RADIATOR PRODUCTS INC.**

P.O. Box 570
Edgefield, SC, U.S.A. 29824
Tel: (803) 637-3166 • Fax: (803) 637-3046
Web: www.trantechradiators.com

Trantech Radiator Products is the largest manufacturer of transformer radiators in North America. We have been supplying radiators for 50 years. Products include 9", 12", 15" and 520mm. Trantech can replace any size panel type radiator, tube assembly, electric cooler or water cooler and provide technical recommendations on other cooling needs.

**TRAYER ENGINEERING CORPORATION**

898 Pennsylvania Avenue
San Francisco, CA, U.S.A. 94107
Tel: (415) 285-7770 • (800) 377-1774
Fax: (415) 285-0883
Web: www.trayer.com

Manufacturer of electrical distribution switchgear with 40 years experience in vacuum technology providing reliable, field-proven, maintenance-free switchgear. Submersible, Padmount, and Vault designs for 5 through 35 kV. Many designs to fit foundations of your existing equipment. Single or 3 phase Vacuum Fault Interrupter protection and fusing options available.

TRENCH LIMITED

71 Maybrook Drive
Scarborough, ON, CA M1V 4B6
Tel: (416) 298-8108 • Fax: (416) 298-2209
Web: www.trenchgroup.com

TRIMBLE

10355 Westmoor Drive
Westminster, CO, U.S.A 80021
Tel: (720) 587-4551 Web: www.trimble.com/utilities

TROPOS NETWORKS

555 Del Rey Avenue
Sunnyvale, CA, U.S.A 94085
Tel: (408) 331-6805 Web: www.tropos.com

TRUE NORTH GEAR

PO Box 28789
Seattle, WA, U.S.A 98118
Tel: (800) 873-5725
Web: www.truenorthgear.com

**TSTM**

2900 Sencore Drive #100,
Sioux Falls, SD, U.S.A. 57107
Tel: 605-334-2924 • Fax: 605-334-4713
Web: www.ts-tm.com

See ad page **73**

TSTM (Two Sockets - Two Meters, Inc.) is dedicated to improving metering function, installation, cost and safety. TSTM sprang from products developed in response to catastrophic meter explosion. In addition to the multi-transformer VT-Pack, we manufacture superior sockets, meter adapters, accessories and our famous 'hockey puck' toroidal transformers.

U

**UNDERGROUND DEVICES INC.**

3304 Commercial Drive
Northbrook, IL, U.S.A. 60062-1909
Tel: (847) 205-9000 • Fax: (847) 205-9004
Web: www.udevices.com

See ad page **30**

Underground Devices manufacturers of multiple styles of duct spacers, custom bore spacers and several styles of nonmetallic manhole cable racks for underground power and communications installations.

URS CORPORATION

510 Carnegie Center
Princeton, NJ, U.S.A 08540
Tel: (609) 720-3282
Web: www.urscorp.com

**UTILICASE**

7777, Décarie, suite 501,
Montréal (Québec)
Canada H4P 2H2
Tel: (514) 321-4505
Web: www.utilicase.com

See ad page **Back Cover**

UTILICASE provides software and services that help power companies optimize and manage resources to ensure reliability, reduce risks and improve efficiencies. UTILICASE Solutions provides business strategy, IT consulting and Integration services to utilities. UTILICASE EPS, provides asset care optimization and asset investment planning tools. (www.utilicase.com)

**UTILICON SOLUTIONS, LTD**

708 Blair Mill Rd
Willow Grove, PA, U.S.A. 19090
Tel: (215) 784-1406 • (877) 884-5426
Fax: (215) 784-4225
Web: www.utiliconltd.com

Through its subsidiaries, including Asplundh Construction Corporation, Utility Lines Construction Services, Inc., Highlines Construction Company, Inc., Utilities Service Corporation, Musgrove Construction, Inc., American Electrical Testing Co. Inc., American Lighting and Signalization, Utility Meter Services, VSI Meter Services, Utility Pole Technologies and Asplundh One-Call, **UtiliCon Solutions, Ltd.** offers utilities access to a broad range of construction, maintenance and management services.

UTILITY TESTING LABORATORY

1615 W. 2200 S. Suite A
Salt Lake City, UT, U.S.A 84119
Tel: (801) 485-8941 • Fax: (801) 467-0065
Web: www.ut-labs.com

UTILX CORPORATION

PO Box 97009
Kent, WA, U.S.A 98064
Tel: (800) 252-0556
Web: www.utilx.com/

V

**VALMONT NEWMARK**

Two Perimeter Park South Suite 475 West
Birmingham, AL, U.S.A. 35243

Tel: (205) 968-7200 • Fax: (205) 968-7201

Web: www.valmont-newmark.com

See ad page 29

Valmont Newmark is your single source for: steel, concrete, hybrid, transmission, distribution, and substation power delivery structures. Our complete product line, combined with an experienced engineering staff, and dedicated customer service enables us to provide you the highest quality, most economical solutions that meet our industry's demanding requirements.

**VANGUARD SYSTEMS**

2901 Dutton Mill Road Suite 220

Aston, PA, U.S.A. 19014

Tel: (610) 891-7703 (8am - 5pm EST) • Fax: (610) 891-9117

Web: www.vansystems.com

Enterprise Document Management Systems Built to Fit Your Needs

Vanguard Systems offers a seamless integrated document management solution that covers the entire document life cycle, IMS-21, EliteForms and e-DMS.NET combine to deliver a single, comprehensive, multi-platform solution for Forms, Imaging, Document Management, Content Management, Workflow, Records Management, Archiving and Data Extraction – optimized for any system.

**VANQUISH FENCING INCORPORATED**

Morrisville, PA, U.S.A. 19067

Tel: 215-295-2863 • Fax: 888-453-1536

Web: www.vanquishfencing.com

VANQUISH's™ Animal Deterrent Fence System is a proactive approach in the fight to keep small crawling animals out of substations, preventing interference with electrical equipment and potential power outages. VANQUISH™ is "ALWAYS ON GUARD".

**VELCON FILTERS, LLC.**

1210 Garden of the Gods road
Colorado Springs, CO, U.S.A. 80907

Tel: (719) 531-5855 • 1-800-531-0180

Fax: (719) 531-5690

Web: www.velcon.com/systems

Turn oil handling into art with Velcon! Our fixed, portable, and mobile filtration and storage systems combine such features as versatility, simplicity, and quality to purify insulating oil using advanced Superdri® cartridge technology. With this technology Velcon's load tap changer filter systems, oil filter trailers, and on-line transformer drying systems out-perform other manufacturers' systems.

**VIDEX INC.**

1105 Ne Circle Blvd

Corvallis, OR, U.S.A. 97330

Tel: (541) 738-5500 • Fax: (541) 738-5501

Web: www.videx.com/lock21

Videx is an industry leader in the design and manufacturing of CyberLock, a key-centric access control solution. CyberLock is an electromechanical system of smart padlocks, electronic locks, and programmable keys that quickly delivers wireless access control and auditing without power or wiring. CyberLock email notifications, access schedules, and audit reports help keep management informed.

VIRGINIA TRANSFORMER

220 Glade View Dr

Roanoke, VA, U.S.A. 24012

Tel: (540) 345-9892 • Fax: (540) 342-7694

Web: www.vatransformer.com

W

**W.I.R.E. SERVICES**

211 Commerce Drive

Winnipeg, MB, CA R3P 1A3

Tel: (204) 480-5800 • Fax: (204) 480-5107

Web: www.wireservices.ca

See ad page 38

W.I.R.E. Services provides electric utilities a full solution package for their transmission line needs. Through our professional and highly experienced

employees, we are a «one-stop shop» for transmission line modelling, thermal rating analysis, upgrade engineering, danger tree/vegetation assessments, new route surveys, design engineering, and other environmental applications.

WALTER DOW ASSOCIATES LTD.

139 Mulock Avenue

Toronto, ON, CA M6N 1G9

Tel: (416) 236-8880 • Fax: (416) 236-9160

Web: www.walterdow.com

**WAUKESHA COMPONENTS**

9011 Governors Row

Dallas, TX, U.S.A. 75247

Tel: 800-338-5526 • Fax: 214-637-1157

Web: www.waukeshaelectric.com

Leading manufacturer of transformer, LTC and breaker components including a line of Transformer Health Products®. Valued supplier of LTC services including maintenance training, failure analysis reporting and complete overhauls. Strong reputation as an industry leader in reverse-engineering and design enhancement. A division of Waukesha Electric Systems, Inc.

**WAUKESHA ELECTRIC SYSTEMS, INC.**

400 S. Prairie Ave.

Waukesha, WI, U.S.A. 53186

Tel: 1-800-835-2732 • Fax: (262) 521-0145

Web: www.waukeshaelectric.com

One of the largest U.S. manufacturers of power transformers and valued supplier of transformer, LTC and breaker components; training; and complete transformer service solutions: spare transformer fleet management; transformer installation, maintenance, relocation and testing; transformer oil processing, dryouts and retrofills; equipment regasketing; load tap changer field retrofits, repairs and refurbishments.

WEIDMANN**WEIDMANN DIAGNOSTIC SOLUTIONS INC**

One Gordon Mills Way P.O. Box 799

St. Johnsbury, VT, U.S.A. 05819-0799

Tel: (800) 811-2284 • Fax: (916) 455-0191

Web: www.weidmann-electrical.com

WEIDMANN Diagnostic Solutions specializes in analytical testing, diagnostic evaluation services, on-line monitoring technology, and technical training programs to improve reliability of fluid filled electrical transformers and substation apparatus. Experienced and skilled chemists and engineers will dovetail with your team to provide the most cost effective management of your substation assets.

WELLS CARGO

1503 W McNaughton Street
Elkhart, IN, U.S.A 46515
Tel: (800) 348-7553 • Fax: (574) 264-5938
Web: www.wellscargo.com

WESCHLER INSTRUMENTS

16900 Foltz Parkway
Cleveland, OH, U.S.A 44149
Tel: (440) 238-2550 • Fax: (440) 238-0660
Web: www.weschler.com

WILLIAMS METALS WELDING ALLOYS INC

125 Strafford Ave Suite 108
Wayne, PA, U.S.A 19087
Tel: (610) 225-0105 • Fax: (610) 225-0208
Web: www.wmwa.net

WINOLA INDUSTRIAL INC.

Climbing Device Division R.R. #1
Box 1070 Factoryville, PA, U.S.A. 18419
Tel: (570) 378-3808 • Fax: (570) 378-2597
Web: www.winolaindustrial.com

Winola Industrial Inc.

Climbing Device Division

WINOLA INDUSTRIAL INC.

R.R. #1 Box 1070
Factoryville, PA, U.S.A.
Tel: (570) 378-3808 • Fax: (570) 378-2597
Web: www.winolaindustrial.com

See ad page 5

Winola Industrial Inc. is the manufacturer of the original McGregor Ladders. We also fabricate a wide variety of application-specific climbing devices and related accessories for transmission, distribution and communication structures. Standard designs are frequently in stock. We also provide arrange of field services to our manufacturing, utility, mining and cellular customers.

WIRELESS MATRIX

13645 Dulles Technology Drive #100
Herndon, VA, U.S.A 20171
Tel: (888) 843-8554 • Fax: (703) 262-0380
Web: www.wirelessmatrix.com

WRIGHT TOOL COMPANY

One Wright Drive
Barberton, OH, U.S.A 44203
Tel: (800) 321-2902 • Fax: (800) 543-2095
Web: www.wrighttool.com

**WRIGHT TREE**

PO Box 1718
Des Moines, IA, U.S.A.
Tel: 800.882.1216 • Fax: 515.274.3582
Web: wrighttree.com

Wright Tree Service is an employee-owned company offering the entire package of vegetation management services. Our work includes utility line clearance, right-of-way mowing, land clearing, herbicide application, substation grounds maintenance, storm response and e-planning solutions. Since 1933, our commitment to safety and efficiency has been our highest priority.

X

XEOS IMAGING

2750 Einstein Street, suite 200
Quebec City, QC, CA G1P 4R1
Tel: (418) 780-2155 • Fax: (418) 780-0713
Web: www.xeosimaging.com

Z

Z SEARCH RECRUITING, INC.

1823 E. Bittersweet Lane
Mt. Prospect, IL, U.S.A 60056
Tel: (847) 867-9309
Web: www.linkedin.com/in/wireless2renewables
indice=327 **Bonne chance**

Why You Have No Idea How Much Revenue You Are Losing.

Un-metered load is only a part of the story.

If a meter is dead or miswired, you can't possibly know how much power has – literally – been lost from the books. More than likely, you're using 480V direct-metered systems that are volatile, dangerous, and less than optimal in today's AMI/AMR datastreams.

Updating your system to AMI/AMR compatible low-voltage metering is an effective step toward higher revenues and lower risk.

You have unmetered customers right now, and every blown or non-reporting meter is bleeding productivity.

I can show you how to reduce meter failure, while improving AMI/AMR telemetry and safety.

- Reduce – nearly *eliminate* – untimely meter failure
- Update outdated or errant wiring
- Eliminate AMI/AMR signal loss errors
- Cut install time to a fraction
- Reduce risk of flash-over and death

**Fully
AMI / AMR
Compatible.**

"Let's put an end to dangerous 480V metering."
Greg May, President, TSTM

Contact TSTM and test any of our products risk-free.



VT-Pack toroidal meter assembly. Fully AMI/AMR certified. See install video at ts-tm.com.



See high-performance meter sockets and other products at ts-tm.com.

TSTM
TWO SOCKETS-TWO METERS Inc.

2900 Sencore Drive, Suite 100,
Sioux Falls, SD 57107 1 866 772 8786
rec@ts-tm.com <http://rec.ts-tm.com>

PRODUCTS AND SERVICES

A

ACCESS CONTROL

CPS SECURITY SOLUTIONS

Tel: (310) 878-8128

VIDEX INC.

Tel: (541) 738-5500
www.videx.com/lock21

ACOUSTIC - CONSULTANT

AVI-SPL, INC.

Tel: 888-619-9083
crg.avispl.com

ADVANCE METERING INFRASTRUCTURE

ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

SYMMETRICOM

Tel: (978) 232-1422
www.symmetricom.com

TSTM

Tel: (605) 334-2924
www.ts-tm.com

ADVANCE METERING INFRASTRUCTURE - AMI

SENSUS

Tel: (800) 638-3748
www.sensus.com

TRANSDATA, INC.

Tel: (972) 418-7717
www.transdatainc.com

AERIAL DEVICES

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

TEREX UTILITIES

Tel: (605) 882-4000
www.terexutilities.com

AERIAL LIFTS

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

ELLIOTT EQUIPMENT COMPANY

Tel: (402) 592-4500
www.elliottequip.com

AERIAL LIFTS - TRUCK MOUNTED, INSULATED

ALTEC HILINE, LLC

Tel: (218) 722-9200
www.altec.com

DICA SAFETY TECH OUTRIGGER PADS

Tel: (800) 610-3422
www.dicausa.com

AERIAL LIFTS - RENTAL

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

NESCO SALES AND RENTALS

Tel: (260) 824-6340 • 1-800-252-0043
www.nescosales.com

AERIAL LIFTS - SALES & SERVICES

BRANTFLO MOBILE EQUIPMENT TECHNOLOGY

Tel: (888) 228-3370
www.brantflo.com

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

DUECO INC.

Tel: (262) 547-8500
www.dueco.com

AERIAL LIFTS - TESTING & INSPECTION

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

AERIAL LIFTS - TRUCK MOUNTED, INSULATED

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

DUECO INC.

Tel: (262) 547-8500
www.dueco.com

AERIAL PHOTOGRAPHY

MJ HARDEN

Tel: (913) 981-9522
www.mjharden.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

XEOS IMAGING

Tel: (418) 780-2155
www.xeosimaging.com

AERIAL SURVEY

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880
www.arbormetricssolutions.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

ALARM - DETECTION

DETEKION SECURITY SYSTEMS, INC.

Tel: (607) 729-7179
www.detekion.com

ALARM - REPORTING SYSTEMS

VIDEX INC.

Tel: (541) 738-5500
www.videx.com/lock21

AM/FM GIS

ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

PRODUCTS AND SERVICES

INTERGRAPH CORPORATION

Tel: (303) 785-9835
www.intergraph.com

OSMOSE UTILITIES SERVICES, INC.

Tel: (716) 319-3423
www.osmoseutilities.com

ANALYZERS - GAS-IN-OIL

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

ANALYZERS - OIL

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

ANALYZERS - PCB

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

ANALYZERS - POWER QUALITY

AEMC INSTRUMENTS

Tel: (508) 698-2115

CD NOVA & ASSOCIATED COMPANIES

Tel: (604) 430-5612
www.cdnova.com

DRANETZ - BMI

Tel: (732) 287-3680
www.dranetz-bmi.com

GEORGE M. FRASER LTD (PICKERING)

Tel: (905) 420-6555
www.gmfraser.com

RCC ELECTRONICS

Tel: (905) 238-6848
www.rcce.com

TECHNICAL SYSTEMS 2002 INC.

Tel: (866) 327-8731
www.technical-sys.com

ANCHORS - BOLTS

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

ANCHORS - FOUNDATION

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

ANCHORS - POWER INSTALLED

FORESIGHT PRODUCTS, LLC

Tel: (800) 325-5360
www.earthanchor.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

ANIMAL & WILD LIFE FENCING

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

ANIMAL & WILD LIFE GUARDS

INSULBOOT A DIV. OF PLASTIC DIP MOLDINGS

Tel: (215) 766-2020
www.insulboot.com

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

ANNUNCIATORS

SCHWEITZER ENGINEERING LABORATORIES INC.

Tel: (509) 332-1890
www.selinc.com

ARRESTERS

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

ARRESTERS, LIGHTNING, DISTRIBUTION - LINE TYPE

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

ARRESTERS, LIGHTNING, DISTRIBUTION - STATION

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

ARRESTERS, LIGHTNING, TRANSMISSION AC

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

PRODUCTS AND SERVICES

ASSET MANAGEMENT

ACCENT

Tel: (360) 882-4002
www.varasset.com

APEX COVANTAGE

Tel: (703) 709-3000
www.apexcovantage.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

TELOGIS

Tel: (866) 835-6447
www.telogis.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

AUGERS - EARTH

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

AUTOMATED CALLING AND EMERGENCY NOTIFICATION

TOUCHLOGIC

Tel: (905) 707-0207
www.touchlogic.com

AUTOMATIC METER READING (AMR) - COMMUNICATIONS

TANTALUS

Tel: (919) 900-8970
www.tantalus.com

TROPOS NETWORKS

Tel: (408) 331-6805
www.tropos.com

AUTOMATIC METER READING (AMR) EQUIPMENT

ELSTER

Tel: (919) 212-4800
www.elster.com

AUTOMATION PRODUCTS

FLIR COMMERCIAL SYSTEMS INC.

Tel: (503) 498-3293
www.flirsystems.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

RUGGEDCOM INC.

Tel: (905) 856-5288 • (888) 264-0006
www.ruggedcom.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

AUTOMATION SYSTEMS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

B

BAGS

REEF INDUSTRIES, INC.

Tel: (713) 507-4251
www.reefindustries.com

BATTERY CAPACITY AND MONITORING EQUIPMENT

STORAGE BATTERY SYSTEMS INC

Tel: (262) 703-5800
www.sbsbattery.com

BAYONETS - POLE EXTENSIONS

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BELTS - SAFETY AND BODY

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

BILLING/CUSTOMER CARE

AGENTIS INC.

Tel: (630) 359-6210
www.agentisenergy.com

ORACLE

Tel: 1.800.ORACLE1
www.oracle.com

PREDICTIVEMETRICS, INC.

Tel: (732) 530-9303
www.predictivemetrics.com

PRODUCTS AND SERVICES

BLOCKS - CONDUCTOR STRINGING

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

BLOCKS - HOIST

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BODIES - TRUCK, UTILITY SERVICES

BRAND FX BODY COMPANY

Tel: (204) 223-5944
www.brandfxbody.com

BOX PADS

CONCAST INC.

Tel: (507) 732-4095
www.concastinc.com

BRACES - CROSSARM

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

BRACKETS - ARRESTER

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

BRACKETS - CABLE

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

WINOLA INDUSTRIAL INC.

Tel: (570) 378-3808
www.winolaindustrial.com

BRACKETS - CAPACITOR

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - CLUSTER-MOUNT

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - CONDUIT

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

BRACKETS - CROSSARMS

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - CUTOUT

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - EXTENSION

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - INSULATOR

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - POTHEAD

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - TRANSFORMER

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BRACKETS - TRANSFORMER, MOUNTING

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

BREAKERS

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

PRODUCTS AND SERVICES

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

BREATHABLE, FLAME RESISTANT - GARMENT

NATIONAL SAFETY APPAREL

Tel: (800) 553-0672
www.nsamfg.com

BUCKET LINERS - AERIAL LIFT ACCESSORIES

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

BUS BARS

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

BUS CONDUCTOR - ALUMINUM

WILLIAMS METALS WELDING ALLOYS INC

Tel: (610) 225-0105
www.wmwa.net

BUS DUCTS

MP HUSKY LLC

Tel: (864) 234-4800
www.mphusky.com

BUSHING REPAIR

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

BUSHINGS

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

TRENCH LIMITED

Tel: (416) 298-8108
www.trenchgroup.com

BUSHINGS - COMPOSITE

POLYCAST INTERNATIONAL

Tel: (204) 632-5428
www.polycastinternational.com

BUSHINGS - CONDENSER-TYPE-CAST EPOXY

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

BUSHINGS - DISTRIBUTION APPARATUS (THROUGH 34.5KV)

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

POLYCAST INTERNATIONAL

Tel: (204) 632-5428
www.polycastinternational.com

BUSHINGS - HIGH VOLTAGE APPARATUS (OVER 34.5KV)

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

BUSWAYS

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

C

CABLE - ACCESSORIES

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

CABLE - AERIAL SPACER

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CABLE - AERIAL, SELF-SUPPORTED

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CABLE - COAXIAL

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CABLE - CONTROL

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

CABLE FAULT CURRENT LIMITING, UNDERGROUND

SUPERPOWER, INC.

Tel: (518) 346-1414
www.superpower-inc.com

CABLE - FIBER OPTIC

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

CABLE - GROUNDING

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

PRODUCTS AND SERVICES

CABLE - JUMPER

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

CABLE - OPTICAL GROUND WIRE

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CABLE - PREASSEMBLED CABLE DUCT

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

CABLE - PULLING

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CABLE - RESTORATION

NOVINIUM

Tel: (206) 529-4828
www.novinium.com

UTILX CORPORATION

Tel: (800) 252-0556
www.utilx.com/

CABLE - SUBMARINE

NOVINIUM

Tel: (206) 529-4828
www.novinium.com

CABLE - TEMPORARY GROUND

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

CABLE - UNDERGROUND DISTRIBUTION

NOVINIUM

Tel: (206) 529-4828
www.novinium.com

CABLE - UNDERGROUND, POLYMER-INSULATED

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

CABLE - UNDERGROUND, RESIDENTIAL

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

CABLE ACCESSORIES - URD

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

CABLE CUTTERS - HYDRAULIC

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CABLE FAULT LOCATING - EQUIPMENT

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

RCC ELECTRONICS

Tel: (905) 238-6848
www.rcce.com

THIES ELECTRICAL DISTRIBUTING CO.

Tel: (519) 621-2524
www.djinfo.com/tedc

CABLE LASHERS (SPINNERS)

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CABLE PULLING ACCESSORIES

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

CABLE TRAY

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

CABLES

AMERICAN WIRE GROUP

Tel: 954-455-3050
www.buyawg.com

CABLEK INDUSTRIES

Tel: (514) 421-7171
www.cablek.com

CYBERXLINK

Tel: (951) 691-5708
www.cyberxlink.com

PRODUCTS AND SERVICES

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

PRIMUS CABLE

Tel: (951) 691-5025
www.primuscable.com

CABLES - HIGH TEMPERATURE SUPERCONDUCTING

SUPERPOWER, INC.

Tel: (518) 346-1414
www.superpower-inc.com

CABLES - HIGH VOLTAGE - XLPE

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CABLES - MEDIUM VOLTAGE

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CALIBRATORS - ELECTRICAL STANDARDS

RADIAN RESEARCH, INC.

Tel: (765) 449-5500
www.radianresearch.com

CAPACITORS

ABB

Tel: (514) 856-6266
www.abb.ca

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

CAPACITORS - CONTROLS

BREWS SUPPLY LTD.

Tel: (905) 564-1116
www.brewssupply.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CAPACITORS - POWER FACTOR CORRECTION

PHASECO, INC.

Tel: (281) 893-7522
www.phaseco.com

STACO ENERGY

Tel: (937) 253-1191
www.stacoenergy.com

CAPACITORS - SWITCHES

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

CIRCUIT BREAKER COMPONENTS

WAUKESHA COMPONENTS

Tel: (800) 338-5526
www.waukeshaelectric.com

CIRCUIT BREAKERS

ABB

Tel: (514) 856-6266
www.abb.ca

CIRCUIT BREAKER SALES CO. INC.

Tel: (940) 665-4444
www.cbsales.com

MITSUBISHI ELECTRIC POWER PRODUCTS, INC.

Tel: (724) 778-3115
www.meppi.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

CIRCUIT BREAKERS - MEDIUM AND HIGH VOLTAGE

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

T & R ELECTRIC SUPPLY COMPANY INC.

Tel: (605) 534-3555
www.t-r.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

CIRCUIT BREAKERS - MODIFICATION AND REPAIRS

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

MAGNETECH INDUSTRIAL SERVICE

Tel: (330) 830-3500 • 800-837-1614
www.magnetech.com

CIRCUIT BREAKERS - OIL

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

CIRCUIT RECLOSERS, AUTOMATIC - THREE-PHASE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CIRCUIT SWITCHERS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

PRODUCTS AND SERVICES

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

CIRCUIT SWITCHERS -MOBILE

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

CLAMPS - GROUND

**HASTINGS FIBERGLASS
PRODUCTS INC.**

Tel: (269) 945-9541
www.hfgp.com

CLAMPS - HOT LINE

**HASTINGS FIBERGLASS
PRODUCTS INC.**

Tel: (269) 945-9541
www.hfgp.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.maclepower.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CLAMPS - TEMPORARY GROUND

**HASTINGS FIBERGLASS
PRODUCTS INC.**

Tel: (269) 945-9541
www.hfgp.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.maclepower.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CLOCKS AND TIME DISPLAYS

SYMMETRICOM

Tel: (978) 232-1422
www.symmetricom.com

CLOTHING - FLAME RESISTANT

TRUE NORTH GEAR

Tel: (800) 873-5725
www.truenorthgear.com

COATINGS - BUS BAR

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

COMMUNICATION SYSTEMS

CALAMP

Tel: (805) 987-9000
www.calamp.com

CELERGY NETWORKS, INC.

Tel: (760) 268-1913
www.celergy.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

**COMMUNICATION SYSTEMS -
PROTECTIVE RELAYS**

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

COMPRESSION DIES

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

**COMPUTER CONTROLS AND
AUTOMATION**

**OPEN SYSTEMS INTERNATIONAL,
INC.**

Tel: (763) 551-0559
www.osii.com

THE FOSTER GROUP, INC.

Tel: (312) 609-1009
www.thefostergroup.com

COMPUTERS - EQUIPMENT

MATROX GRAPHICS INC.

Tel: (514) 822-6000
www.matrox.com/graphics

COMPUTERS - RUGGED MOBILE

SYBASE, INC.

Tel: 1-800-SYBASE5
www.sybase.com

COMPUTERS - SOFTWARE

**TERRA SPECTRUM
TECHNOLOGIES**

Tel: (866) 619-5444
www.terra-spectrum.com

VANGUARD SYSTEMS

Tel: (610) 891-7703 (8am - 5pm EST)
www.vansystems.com

WRIGHT TREE

Tel: (800) 882-1216
wrighttree.com

CONCRETE - POLES

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

PRODUCTS AND SERVICES

CONDITION ASSESMENT SYSTEMS

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

CONDITION MONITORING

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

CONDITION MONITORING EQUIPMENT

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

CONDUIT - ACCESSORIES

CALBRITE

Tel: (800) 225-7473
www.calbrite.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

CONDUIT - PLASTIC

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

CONDUIT - POLYETHYLENE, CONTINUOUS

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

CONNECTORS - BOLTED - DISTRIBUTION

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

CONNECTORS - COMPRESSION, DISTRIBUTION

ASK PRODUCTS INC.

Tel: (630) 896-4056
www.asklug.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

CONNECTORS - COMPRESSION, TRANSMISSION

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

CONNECTORS - ELECTRICAL

MVA POWER INC

Tel: (450) 589-0445
www.mvpower.qc.ca

CONNECTORS - GROUNDING

ERICO, INC.

Tel: (440) 248-0100
www.erico.com

MVA POWER INC

Tel: (450) 589-0445
www.mvpower.qc.ca

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

CONNECTORS - PLUG-IN

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

CONNECTORS - SUBSTATION

DMC POWER (FORMERLY DEUTSCH METAL COMPONENTS)

Tel: 888-SWAGE-NOW
www.dmcusa.com/

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MVA POWER INC

Tel: (450) 589-0445
www.mvpower.qc.ca

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

CONNECTORS - TECK CABLE

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

PRODUCTS AND SERVICES

CONNECTORS, UNDERGROUND - TERMINATING

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

CONSOLES - SCADA CONTROL CENTERS

PRIMATE TECHNOLOGIES

Tel: (321) 821-2227
www.primate-tech.com

CONSTRUCTION AND PROJECT ENGINEERING

CORELOGIC

Tel: (800) 426-1466

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

WALTER DOW ASSOCIATES LTD.

Tel: (416) 236-8880
www.walterdow.com

CONSTRUCTION SERVICES

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

UTILICON SOLUTIONS, LTD

Tel: (215) 784-1406 • (877) 884-5426
www.utiliconltd.com

CONSTRUCTION SPECIALIZED

QUANTA SERVICES

Tel: (713) 629-7600
www.quantaservices.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONSULTANTS - CABLE TESTING AND FAULT LOCATING

KINECTRICS INC.

Tel: (416) 207-6000
www.kinectrics.com

CONSULTANTS - POWER QUALITY

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONSULTANTS - SUBSTATION DESIGN & ENGINEERING

EXPONENTIAL ENGINEERING COMPANY

Tel: (970) 207-9648
www.exponentialengineering.com

PRIMARY POWER GROUP

Tel: (905) 426-2952
www.primarypowergroup.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

STANLEY CONSULTANTS, INC.

Tel: (800) 553-9694
www.stanleyconsultants.com

CONSULTANTS - T&D ENGINEERING

COMMONWEALTH ASSOCIATES, INC.

Tel: (517) 788-3000
www.cai-engr.com

PATTERSON & DEWAR ENGINEERS

Tel: (770) 453-1410
www.pd-engineers.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

CONSULTANTS - UNDERGROUND AND UNDERWATER CABLE

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

CONSULTING

CN UTILITY CONSULTING

Tel: (707) 829-1018
www.cnutility.com

HART ENERGY CONSULTING - ELECTRIFICATION OF TRANSPORT STUDIES

Tel: (713) 260-6400
www.hartenergyconsulting.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONSULTING ENGINEERING

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

GDS ASSOCIATES, INC.

Tel: (770) 425-8100
www.gdsassociates.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

PRODUCTS AND SERVICES

CONTACTORS - DC/AC

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

CONTRACT SERVICES - FIELD INVENTORY - AUDIT SERVICES

CN UTILITY CONSULTING

Tel: (707) 829-1018
www.cnutility.com

CONTRACTORS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTRACTORS - CONSTRUCTION

UTILICON SOLUTIONS, LTD

Tel: (215) 784-1406 • (877) 884-5426
www.utiliconltd.com

CONTROL CENTER DESIGN

MAUELL CORPORATION

Tel: (717) 432-8686
www.mauell-us.com

CONTROL SYSTEMS - ELECTRIC/ ELECTRONIC

AXIOMATIC TECHNOLOGIES CORPORATION

Tel: 1-905-602-9270 x225
www.axiomatic.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTROLLERS/CONTROLS - PROGRAMMABLE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTROLS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTROLS - CAPACITORS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTROLS - PEAK DEMAND

NEOPTIX FIBER OPTIC SENSORS

Tel: (418) 687-2500
www.neoptix.com

CONTROLS - SUPERVISORY

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CONTROLS - TEMPERATURE

KRENZ & COMPANY INCORPORATED

Tel: (262) 255-2310
www.krenzvent.com

CONTROLS - VAR

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

COOLERS - TRANSFORMER OIL

TRANTECH RADIATOR PRODUCTS INC.

Tel: (803) 637-3166
www.trantechradiators.com

CORONA EQUIPMENT - SALES

OX CREEK ENERGY

Tel: (608) 589-5513 • (800) 531-6232
www.ox-creek-energy.com

OX CREEK ENERGY ASSOC INC - SPECIALIZED CAMERA SALES

Tel: (800) 531-6232
www.specialcamera.com

CRANES

AIR TECHNICAL INDUSTRIES

Tel: (440) 951-5191 • 800-321-9680
www.airtechnical.com

CRANES - HYDRAULIC

AIR TECHNICAL INDUSTRIES

Tel: (440) 951-5191 • 800-321-9680
www.airtechnical.com

CRANES - MANUFACTURERS/ DISTRIBUTORS

AIR TECHNICAL INDUSTRIES

Tel: (440) 951-5191 • 800-321-9680
www.airtechnical.com

DUECO INC.

Tel: (262) 547-8500
www.dueco.com

CRIMPING TOOLS - ELECTRICAL

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CROSSARMS

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

PRODUCTS AND SERVICES

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

CROSSARMS - FIBERGLASS - REINFORCED

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleaupower.com

PUPI DIVISION, GEOTEK

Tel: (800) 533-1680
www.pupicrossarms.com

CROSSARMS, WOOD - LAMINATED

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

CROSSARMS, WOOD - SOLID

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

CSA 2010 SERVICES

NECS

Tel: (800) 348-3242
www.necssolutions.com

NECS-NATIONAL ENERGY CONTROL SERVICES

Tel: (812) 634-1413
www.necssolutions.com

CURRENT SENSORS

ION PHYSICS CORP.

Tel: (603) 895-5100
www.ionphysics.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CUTOUTS, FUSED - OPEN, LOADBREAK

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CUTOUTS, LOADBREAK

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

CUTTERS - CABLE AND WIRE

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

CYBER SECURITY

LOCKHEED MARTIN

Tel: (610) 354-2538
www.lockheedmartin.com

D

DAMPERS - VIBRATION

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

DATA ACQUISITION SYSTEMS

COOPER POWER SYSTEMS - ENERGY AUTOMATION SOLUTIONS

Tel: (418) 834-0009
www.cooperpowereas.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OLAMETER INC.

Tel: (800) 903-7003
www.olameter.com

DATA CONVERSION

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.ensperia.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

DEADENDS WOOD, LAMINATED

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

DETECTORS - PARTIAL DISCHARGE

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

PRODUCTS AND SERVICES

DIAGNOSTIC EQUIPMENT

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

DISTRIBUTED CONTROL SYSTEMS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

DISTRIBUTION AUTOMATION - COMMUNICATIONS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

DISTRIBUTION AUTOMATION SYSTEMS

ABB

Tel: (514) 856-6266
www.abb.ca

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

EFACEC ADVANCED CONTROL SYSTEMS

Tel: (800) 831-7223
www.efacec-acsc.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

DISTRIBUTION MANAGEMENT SYSTEMS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

EFACEC ADVANCED CONTROL SYSTEMS

Tel: (800) 831-7223
www.efacec-acsc.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

DOCUMENT MANAGEMENT & WORKFLOW SOLUTIONS

COMSQUARED SYSTEMS

Tel: (800) 592-3766
www.comsquared.com

HP EXSTREAM

Tel: (866) 318-5925
www.hpexstream.com

VANGUARD SYSTEMS

Tel: (610) 891-7703 (8am - 5pm EST)
www.vansystems.com

DRIVER QUALIFICATION FILE MGT SERVICES

NECS

Tel: (800) 348-3242
www.necssolutions.com

NECS-NATIONAL ENERGY CONTROL SERVICES

Tel: (812) 634-1413
www.necssolutions.com

DRIVER SAFETY MANAGEMENT

NECS

Tel: (800) 348-3242
www.necssolutions.com

NECS-NATIONAL ENERGY CONTROL SERVICES

Tel: (812) 634-1413
www.necssolutions.com

DUCT - FITTINGS

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

E

ENCLOSURES - CABINETS

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

ENCLOSURES - FIBERGLASS-REINFORCED

CONCAST INC.

Tel: (507) 732-4095
www.concastinc.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

PRODUCTS AND SERVICES

MERSEN CANADA

Tel: (416) 252-9371

www.mersen.com

ENCLOSURES - POLYMER CONCRETE

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521

www.hubbellpowersystems.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214

www.oldcastleprecast/enclosures

ENERGY EFFICIENCY

LOCKHEED MARTIN

Tel: (610) 354-2538

www.lockheedmartin.com

ENERGY MANAGEMENT SYSTEMS

AGENTIS INC.

Tel: (630) 359-6210

www.agentisenergy.com

BLUE PILLAR

Tel: (888) 234-3212

www.bluepillar.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559

www.osii.com

UTILICASE

Tel: (514) 321-4505

www.utilicase.com

ENERGY SAVINGS PRODUCTS

ADG ECO LIGHTING PRODUCTS

Tel: (818) 597-9494

www.adgecolp.com

AZTECH ASSOCIATES INC.

Tel: (613) 384-9400

www.aztechmeter.com

BLUE LINE INNOVATIONS

Tel: (709) 579-3502

www.bluelineinnovations.com

ENGINEERING

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000

www.sargentlundy.com

ENGINEERING - CONSULTANTS

A.I. ORLOFF, ELECTRICAL ENGINEER

Tel: (949) 261-5491

www.ocsoft.us

IEC & ASSOCIATES

Tel: (919) 828-6755

www.ieca-inc.com

LOCKHEED MARTIN

Tel: (610) 354-2538

www.lockheedmartin.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000

www.sargentlundy.com

TESHMONT CONSULTANTS LP

Tel: (204) 284-8100

www.teshmont.com

ENGINEERING - CONSULTANTS - CONSTRUCTION

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

ENGINEERING - DESIGN

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014

www.maclepower.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000

www.sargentlundy.com

SATCON TECHNOLOGY CORPORATION

Tel: (888) 728-2664

www.satcon.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774

www.trayer.com

W.I.R.E. SERVICES

Tel: (204) 480-5800

www.wireservices.ca

ENGINEERING - EQUIPMENT

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774

www.trayer.com

ENGINEERING - PROFESSIONAL SERVICES

SARGENT & LUNDY LLC

Tel: (312) 269-2000

www.sargentlundy.com

W.I.R.E. SERVICES

Tel: (204) 480-5800

www.wireservices.ca

ENGINEERING - SERVICES

ABB

Tel: (514) 856-6266

www.abb.ca

DOBLE ENGINEERING CO.

Tel: (617) 393-2908

www.doble.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

PRODUCTS AND SERVICES

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

ENGINEERING - SERVICES - T & D

QUANTA SERVICES

Tel: (713) 629-7600
www.quantaservices.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

TOWER DRAFTING SERVICES, INC.

Tel: (412) 682-7618
www.towerdraft.com

URS CORPORATION

Tel: (609) 720-3282
www.urscorp.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

ENGINEERING - SOFTWARES

MANITOBA HVDC RESEARCH CENTRE

Tel: (204) 989-1240
www.pscad.com

ENVIRONMENTAL SERVICES

SYSTEMS ENGINEERING COMPANY

Tel: (800) 846-4539
www.systemsengineeringcompany.net

ETHERNET

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

EXIT SIGNS

AMERICAN PERMALIGHT INC

Tel: (310) 891-0924
www.americanpermalight.com

F

FALL PROTECTION TRAINING

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

FANS

KRENZ & COMPANY INCORPORATED

Tel: (262) 255-2310
www.krenzvent.com

FANS - INSPECTION, REPAIRS & PARTS

KRENZ & COMPANY INCORPORATED

Tel: (262) 255-2310
www.krenzvent.com

FANS - TRANSFORMER-COOLING

KRENZ & COMPANY INCORPORATED

Tel: (262) 255-2310
www.krenzvent.com

PARADOXE CORPORATION

Tel: (731) 664-4345
www.pxecorp.com

FASTENERS - SPECIAL

DENDOFF SPRINGS

Tel: (604) 580-3400
www.dendoff.com

FAULT ANALYSIS

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

FIBER OPTIC - SENSORS

FISO TECHNOLOGIES

Tel: (418) 688-8065 X 241
www.fiso.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

FIBER OPTIC COMMUNICATIONS

AFL

Tel: (864) 433-0333
www.aflglobal.com

FIBER OPTICS FOR SALE CO.

Tel: (408) 890-6299
www.fiberoptics4sale.com

FIBER SAVVY

Tel: (951) 801-5780
www.fibersavvy.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

FIBER OPTICS

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

PRODUCTS AND SERVICES

FIBERGLASS - PIPE, TANK

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

FIELD AUTOMATION

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.ensperia.com

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

FIELD INSTALLATION SERVICES

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

FILTERS - POWER FACTOR

ARTECHE PQ POWER QUALITY DIVISION

Tel: (262) 754-3883
www.artechepq.com

FILTRATION - LIQUID SYSTEMS

VELCON FILTERS, LLC.

Tel: (719) 531-5855 • 1-800-531-0180
www.velcon.com/systems

FILTRATION EQUIPMENT

VELCON FILTERS, LLC.

Tel: (719) 531-5855 • 1-800-531-0180
www.velcon.com/systems

FILTRATION SYSTEMS - OIL

VELCON FILTERS, LLC.

Tel: (719) 531-5855 • 1-800-531-0180
www.velcon.com/systems

FIRST AID TRAINING

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

FIRE PROTECTION EQUIPMENT

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

FLAME RESISTANT CLOTHING

SALISBURY BY HONEYWELL

Tel: (630) 343-3800
www.salisburybyhoneywell.com

FLOODLIGHTS (SEE ALSO LIGHTS)

GOLIGHT INC

Tel: (308) 278-3131
www.golight.com

FUEL TAX RECOVERY SERVICES

NECS

Tel: (800) 348-3242
www.necssolutions.com

NECS-NATIONAL ENERGY CONTROL SERVICES

Tel: (812) 634-1413
www.necssolutions.com

FUEL TAX REPORTING SERVICES

NECS

Tel: (800) 348-3242
www.necssolutions.com

FUSELINK - CUTOUTS

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

FUSES

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

G

GAUGES - PRESSURE

DWYER INSTRUMENTS INC

Tel: (800) 872-9141
www.dwyer-inst.com

REINHAUSEN MANUFACTURING INC. ATT: CHRISTY CRAWFORD

Tel: (731) 562-4127
www.reinhausen.com

GAUGES - TEMPERATURE

FISO TECHNOLOGIES

Tel: (418) 688-8065 X 241
www.fiso.com

GENERAL CONTRACTORS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

GENERAL CONTRACTORS - CONSTRUCTION

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

PRODUCTS AND SERVICES

GIS - SOFTWARE

CORELOGIC

Tel: (800) 426-1466

WRIGHT TREE

Tel: (800) 882-1216
wrighttree.com

GLOBAL POSITIONING SYSTEMS - PRECISE TIMING SYSTEMS

SYMMETRICOM

Tel: (978) 232-1422
www.symmetricom.com

GLOBAL POSITIONING SYSTEMS - SUBSTATION SYNCHRONIZATION

SYMMETRICOM

Tel: (978) 232-1422
www.symmetricom.com

GLOBAL POSITIONING SYSTEMS (GPS)

AUTOVISION WIRELESS INC

Tel: (416) 700-2673
autovisionwireless.com

LONGVIEW ADVANTAGE CORPORATION

Tel: 866-514-8030, ext 7576
www.longviewadvantage.com

SKYGUARD, LLC

Tel: (866) 997-5948
www.skyguard.com

GLOVES - RUBBER

SALISBURY BY HONEYWELL

Tel: (630) 343-3800
www.salisburybyhoneywell.com

GLOVES - TESTING

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

GRIPS - CABLE-PULLING

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

GROUND RODS - COPPERWELD

GALVAN INDUSTRIES, INC.

Tel: (704) 455-5102
www.galvanelectrical.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

GROUNDING - EQUIPMENT

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

GROUPS - TRAVELING

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

GUARDS - ANIMAL AND BIRDS

I-STOP SERVICE CORPORATION

Tel: (574) 247-9649
www.istopservicecorp.com

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

H

HANDHOLES AND MANHOLES

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

HANDLING EQUIPMENT

AIR TECHNICAL INDUSTRIES

Tel: (440) 951-5191 • 800-321-9680
www.airtechnical.com

HARDWARE - POLELINE

ELECTRIC POWER ACCESSORIES CORPORATION (EPAC)

Tel: (866) 289-3722
www.epac.ca

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

HARDWARE - TRANSMISSION LINE

BBCFASTENERS

Tel: (708) 597-9100
www.bbcfasteners.com

HELIX UNIFORMED LTD

Tel: (514) 828-0057
www.helix-uni.ca

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

JS HARDWARE / DOUBLETREE SYSTEMS

Tel: (408) 850-1416
www.js-hardware.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

PREFORMED LINE PRODUCTS

Tel: (440) 461-5200
www.prefomed.com

PRODUCTS AND SERVICES

HEAT EXCHANGERS

TECHSOURCE THERMAL SOLUTIONS, INC.

Tel: (781) 939-9988
www.techsource.net

TRANTECH RADIATOR PRODUCTS INC.

Tel: (803) 637-3166
www.trantechradiators.com

HEAT EXCHANGERS - TRANSFORMER

TRANTECH RADIATOR PRODUCTS INC.

Tel: (803) 637-3166
www.trantechradiators.com

HOISTS

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

HUB SWITCHES

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

I

INDICATORS - FAULT

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

INFORMATION TECHNOLOGY AND MANAGEMENT CONSULTING

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

LOCKHEED MARTIN

Tel: (610) 354-2538
www.lockheedmartin.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

INFRARED - IMAGING

MAGNETECH INDUSTRIAL SERVICE

Tel: (330) 830-3500 • 800-837-1614
www.magnetech.com

INSPECTION - FIELD SERVICES

MAGNETECH INDUSTRIAL SERVICE

Tel: (330) 830-3500 • 800-837-1614
www.magnetech.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

INSPECTION SERVICES

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880
www.arbormetricssolutions.com

INSTRUMENTATION AND CONTROLS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

REINHAUSEN MANUFACTURING INC. ATT: CHRISTY CRAWFORD

Tel: (731) 562-4127
www.reinhausen.com

INSTRUMENTATION POWER QUALITY

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

INSTRUMENTS - ON LINE MEASURING

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

INSTRUMENTS TRANSFORMERS - CURRENT AND VOLTAGE FOR ANALOGUE METERS

INSTRUMENT TRANSFORMER EQUIPMENT CORPORATION

Tel: (704) 282-4331
www.itec-ctvt.com

RITZ INSTRUMENT TRANSFORMERS, INC.

Tel: (706) 376-2769
www.ritzusa.com

INSULATED HAND TOOLS

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

INSULATING OIL

PETRO CANADA

Tel: 1-800-268-5850

POWERTECH LABS INC

Tel: (604) 590-7446
www.powertechlabs.com

SESCO - SYSTEMS ENGINEERING AND SALES, INC

Tel: (260) 422-1671 • 800.422.2028
www.sesco-inc.com

PRODUCTS AND SERVICES

INSULATORS - GUY STRAIN - FIBERGLASS - REINFORCED

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

INSULATORS - PLASTIC REPLACEMENT

EMC PACIFIC HOLDINGS

Tel: (250) 752-5051
www.emcpacific.com.au

INSULATORS - POLYMER

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

POLYCAST INTERNATIONAL

Tel: (204) 632-5428
www.polycastinternational.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

INSULATORS - PORCELAIN

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

INSULATORS - POST-HORIZONTAL

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

INSULATORS - SUSPENSION

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

NANJING ELECTRIC / DOUBLETREE SYSTEMS

Tel: (408) 850-1416
www.nanjing-insulators.com

INSULATORS - SWITCH AND BUS

POLYCAST INTERNATIONAL

Tel: (204) 632-5428
www.polycastinternational.com

INVERTERS

SMA AMERICA

Tel: (916) 625-0870
www.sma-america.com

K

KITS - CABLE - TERMINATING

DSG-CANUSA

Tel: (416) 743-7111
www.dsghanusa.com

L

LABELS

LEM PRODUCTS INC.

Tel: (215) 348-9900
www.lemproductsinc.com

TECH PRODUCTS, INC.

Tel: (718) 442-4900
www.techproducts.com

LABORATORIES

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

UTILITY TESTING LABORATORY

Tel: (801) 485-8941
www.ut-labs.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

LABORATORY EQUIPMENT AND SUPPLIES

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

LADDERS - INDUSTRIAL

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

LANYARDS, SHOCK ABSORBING

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

LED PRODUCTS

ARANI SYSTEMS CORP.

Tel: (888) 992-7264
www.arani.ca

LIDAR - INSPECTION

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880
www.arbormetricssolutions.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

PRODUCTS AND SERVICES

LIDAR - SURVEY

CN UTILITY CONSULTING

Tel: (707) 829-1018
www.cnutility.com

LIDAR SERVICES INTERNATIONAL INC.

Tel: (403) 517-3132
www.lidarservices.ca

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

LIFTS - AERIAL BUCKET

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

LIFTS - AERIAL, PLATFORM -TYPE

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

LIGHTING - COMMERCIAL & INDUSTRIAL

HOLOPHANE

Tel: (740) 345-9631
www.holophane.com

LIGHT SOURCE UNLIMITED

Tel: (224) 543-4003
www.lightsourceunlimited.com

LIGHTING - CONTROLS

RIPLEY LIGHTING CONTROLS

Tel: (803) 939-4700
www.ripleylc.com

LIMITERS - CURRENT

SUPERPOWER, INC.

Tel: (518) 346-1414
www.superpower-inc.com

LINESMEN - EQUIPMENT

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

LINKS - FUSE

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

LOAD MANAGEMENT - COMMUNICATIONS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

LOCATORS - RADIO INTERFERENCE

RADAR ENGINEERS

Tel: (503) 256-3417
www.radarengineers.com

LOCKING DEVICES

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

INNER-TITE CORP.

Tel: (508) 829-6361
www.inner-tite.com

VIDEX INC.

Tel: (541) 738-5500
www.videx.com/lock21

LOCKOUT SYSTEMS

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

VIDEX INC.

Tel: (541) 738-5500
www.videx.com/lock21

LOCKOUTS

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

LOCKOUTS - SAFETY

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

LUBE OIL

PETRO CANADA

Tel: 1-800-268-5850

LUBRICANTS

BRONTO SKYLIFT

Tel: (352) 895-1109
www.bronto.fi

PETRO CANADA

Tel: 1-800-268-5850

LUBRICANTS - ENVIRONMENT FRIENDLY

PETRO CANADA

Tel: 1-800-268-5850

M

MAINTENANCE - BATTERIES

FANTASIA ASSOCIATES INC.

Tel: (617) 481-0463
www.fantasia-associates.com

MAINTENANCE - SERVICES AND PRODUCTS

ABB

Tel: (514) 856-6266
www.abb.ca

DIVERSIFIED PRODUCTS

Tel: (254) 757-1177
www.diversifiedproduct.com

NOVINIUM

Tel: (206) 529-4828
www.novinium.com

PENTA INDUSTRIAL CORP.

Tel: (314) 878-0143
www.penta.net

PRODUCTS AND SERVICES

MANAGEMENT CONSULTING

ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

FMI CORPORATION

Tel: (919) 785-8400
www.fminet.com

NAVIGANT

Tel: (202) 481-7336
www.navigant.com

Z SEARCH RECRUITING, INC.

Tel: (847) 867-9309
www.linkedin.com/in/wireless2renewables

MAPPING SYSTEMS - MOBILE

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880
www.arbormetricssolutions.com

POWEL INC.

Tel: (651) 251-3005
www.powelinc.com

WRIGHT TREE

Tel: (800) 882-1216
wrighttree.com

MARKERS - CABLE

LEM PRODUCTS INC.

Tel: (215) 348-9900
www.lemproductsinc.com

MARKERS - FIBER OPTIC

LEM PRODUCTS INC.

Tel: (215) 348-9900
www.lemproductsinc.com

MARKERS - POLES

ELECTROMARK

Tel: (800) 295-8247
www.electromark.com

MATERIAL HANDLING EQUIPMENT

AIR TECHNICAL INDUSTRIES

Tel: (440) 951-5191 • 800-321-9680
www.airtechnical.com

MDM METER DATA MANAGEMENT

ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

MEDIA CONVERTERS

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

METER READING EQUIPMENT (AMR) - AUTOMATIC

TSTM

Tel: (605) 334-2924
www.ts-tm.com

METER SERVICES

UTILICON SOLUTIONS, LTD

Tel: (215) 784-1406 • (877) 884-5426
www.utiliconltd.com

METER SOCKET - ACCESSORIES

BROOKS UTILITY PRODUCTS GROUP

Tel: (888) 687-3008 • 888-687-3008
www.brooksutility.com

METERING ACCESSORIES

CD NOVA & ASSOCIATED COMPANIES

Tel: (604) 430-5612
www.cdnova.com

INNER-TITE CORP.

Tel: (508) 829-6361
www.inner-tite.com

METERS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

METERS - ADAPTERS

AE PRODUCTS, INC.

Tel: (866) 848-7756
www.aeproducts.net

METERS - ENCLOSURES

TSTM

Tel: (605) 334-2924
www.ts-tm.com

METERS - GROUND RESISTANCE

AEMC INSTRUMENTS

Tel: (508) 698-2115

METERS - KILOWATTHOUR

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

METERS - MICRO-OHMMETER

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

METERS - PHASE

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

METERS - POWER FACTOR

AEMC INSTRUMENTS

Tel: (508) 698-2115

PRODUCTS AND SERVICES

METERS - POWER QUALITY

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

METERS - VOLT

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

METERS/SUBMETERING SYSTEMS - ELECTRICAL

DENT INSTRUMENTS

Tel: (800) 388-0770
www.dentinstruments.com

INTELLIMETER CANADA INC.

Tel: (905) 839-9199
www.intellimeter.on.ca

MOBILE WORKFORCE MANAGEMENT

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.ensperia.com

MENTOR ENGINEERING

Tel: (403) 777-3760
www.mentoreng.com

WIRELESS MATRIX

Tel: (888) 843-8554
www.wirelessmatrix.com

MODEMS - DATA COMMUNICATION

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

MONITORING - COMMUNICATIONS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

REINHAUSEN MANUFACTURING INC. ATT: CHRISTY CRAWFORD

Tel: (731) 562-4127
www.reinhausen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

MONITORING - EQUIPMENT

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

MONITORING - GENERATORS

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

MONITORING - TRANSFORMERS

CD NOVA & ASSOCIATED COMPANIES

Tel: (604) 430-5612
www.cdnova.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

MONITORING SECURITY SYSTEMS

SYSTEMS WITH INTELLIGENCE INC.

Tel: (289) 562-0126
www.systemswithintelligence.com

MONITORS - FAULT GAS (TRANSFORMERS, CIRCUIT BREAKERS)

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

MONITORS - POWER LINE DISTURBANCE

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

MULTIPLEXERS - DATA COMMUNICATIONS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

MULTIPLEXERS - FIBER OPTICS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

PRODUCTS AND SERVICES

CD NOVA & ASSOCIATED COMPANIES

Tel: (604) 430-5612
www.cdnova.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

MULTIPLEXERS - VOICE COMMUNICATIONS

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

O

OIL - CONTAINMENT EQUIPMENT

IMBIBITIVE TECHNOLOGIES

Tel: (888) 843-2323
www.imbiberbeads.com

SORBWEB PLUS

Tel: (866) 269-8275
www.sorbwebplus.com

OIL - LUBRICATION

PETRO CANADA

Tel: 1-800-268-5850

OIL PURIFYING - RECLAIMING SYSTEMS

VELCON FILTERS, LLC.

Tel: (719) 531-5855 • 1-800-531-0180
www.velcon.com/systems

OIL TESTING - DISSOLVED GAS ANALYSIS

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

OPERATION AND MAINTENANCE SERVICES

QUANTA SERVICES

Tel: (713) 629-7600
www.quantaservices.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

OUTAGE MANAGEMENT SYSTEMS

ENSPIRIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

MACROSOFT INC.

Tel: (973) 795-8405
www.resources-ondemand.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

P

PADLOCKS

ENGINEERING UNLIMITED, INC.

Tel: (612) 522-4040 • 1-800-515-4040
sterlingpadlocks.com

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

VIDEX INC.

Tel: (541) 738-5500
www.videx.com/lock21

PADS - BOX

CONCAST INC.

Tel: (507) 732-4095
www.concastinc.com

PANEL METERS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

PANELS (POWER DISTRIBUTION)

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

PARTIAL DISCHARGE ANALYSIS, DETECTION

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicron
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

PLATFORMS - LINEMAN'S

CONDEX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

PRODUCTS AND SERVICES

PLATFORMS - TRANSFORMERS

ALUMA-FORM INC

Tel: (901) 362-0100
www.alumaform.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

POLE LINE HARDWARE

ENERSCAN ENGINEERING INC.

Tel: (902) 445-4433
www.enerscanengineering.com

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.maclepower.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

POLE MAINTENANCE

UTILICON SOLUTIONS, LTD

Tel: (215) 784-1406 • (877) 884-5426
www.utiliconltd.com

POLES - DISTRIBUTION - CONCRETE

VALMONT NEWMARK

Tel: (205) 968-7200
www.valmont-newmark.com

POLES - DISTRIBUTION - STEEL

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POLES - LIGHTING - STEEL

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POLES - LIGHTING - WOOD, LAMINATED

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

POLES - TRANSMISSION

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POLES - TRANSMISSION - CONCRETE

TRANSAMERICAN POWER PRODUCTS, INC.

Tel: (281) 444-8277
www.tappinc.com

POLES - TRANSMISSION - STEEL

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

THOMAS & BETTS - STEEL

STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POLES - UTILITY

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POWER - LINE CARRIER EQUIPMENT - SYSTEMS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

POWER - MANAGEMENT SYSTEM

E / SYSTEMS

Tel: (313) 882-1133
www.enxex.com

POWER DISTRIBUTION AND/OR TRANSMISSION POLES

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

THOMAS & BETTS - STEEL

PRODUCTS AND SERVICES

STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA – STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

POWER QUALITY EQUIPMENT

AMERICAN SUPERCONDUCTOR (AMSC)

Tel: (978) 843-3000
www.amsco.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

POWER SUPPLIES - UNINTERRUPTIBLE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

PROCESS CONTROL INSTRUMENTATION

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

PROJECT ENGINEERING

CORELOGIC

Tel: (800) 426-1466

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

PROJECT MANAGEMENT AND CONSULTING

ENSPIRA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.enspiria.com

INDEPENDENT CONTRACTOR FOR WEST MONROE PARTNERS

Tel: (630) 915-0326
www.westmonroepartners.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SARGENT & LUNDY LLC

Tel: (312) 269-2000
www.sargentlundy.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

PROTECTION AND CONTROL

OLDCASTLE PRECAST – TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

PULLERS - CABLE

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

DUECO INC.

Tel: (262) 547-8500
www.dueco.com

PULLERS - CABLE, AERIAL

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

PULLERS - CABLE, UNDERGROUND

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

PULLERS - CONDUCTOR

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

PULLERS - ROPE

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

PUMPS - DEWATERING

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

R

RADIATORS - TRANSFORMER

TRANTECH RADIATOR PRODUCTS INC.

Tel: (803) 637-3166
www.trantechradiators.com

RADIO COMMUNICATIONS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

RADIO TWO-WAY - FIXED

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

REACTORS - AIR CORE

ARTECHE USA

Tel: (919) 279-5340
www.coilinnovation.at

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

RECLOSERS

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

PRODUCTS AND SERVICES

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

RECLOSERS - CONTROLS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

RECLOSERS - SINGLE-PHASE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

RECLOSERS - THREE-PHASE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

RECORDERS - DYNAMIC SWING

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

RECORDERS - EVENT

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

RECORDERS - FAULT

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

RECORDERS - TRANSIENT FAULT

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

RECTIFIERS

STATICON LTD.

Tel: (416) 291-3723
www.staticon.ca

REELS

REELCRAFT INDUSTRIES, INC.

Tel: (260) 248-8188
www.reelcraft.com

REELS - CONDUCTOR STRINGING

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

REELS - HANDLING EQUIPMENT

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

REELS - WIRE, GROUNDING

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

RELAYS

ABB

Tel: (514) 856-6266
www.abb.ca

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

RELAYS - ISOLATION

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

RELAYS - LINE PROTECTION

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

RELAYS - PROTECTION

CD NOVA & ASSOCIATED COMPANIES

Tel: (604) 430-5612
www.cdnova.com

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

ENOSERV LLC.

Tel: (918) 622-4530
www.enoserv.com

RONDAR INC.

Tel: (905) 561-2808
www.rondar.com

RELAYS - SUBSTATION AUTOMATION

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

I.C.M.I (INDUCTIVE COMPONENTS MFG., INC)

Tel: (513) 752-4731
www.icmiinc.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

RELAYS - TRANSFORMER PROTECTION

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

PRODUCTS AND SERVICES

REMOTE - SITE MONITORING

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

REMOTE CONTROL - EQUIPMENT

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

LOR MANUFACTURING CO., INC.

Tel: (989) 644-2581
www.lormfg.com

REMOTE INFORMATION SYSTEMS - AUTOMATIC

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

REMOTE TERMINAL UNITS

EFACEC ADVANCED CONTROL SYSTEMS

Tel: (800) 831-7223
www.efacec-acsc.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

REMOTE TERMINAL UNITS - COMMUNICATIONS

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

REMOTE VIDEO INSPECTION SYSTEMS

SYSTEMS WITH INTELLIGENCE INC.

Tel: (289) 562-0126
www.systemswithintelligence.com

RISK MANAGEMENT

EARTH NETWORKS

Tel: (978) 897-7705
www.earthnetworks.com

ROPE - WIRE

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

S

SAFETY - CONSULTING & TRAINING

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

SAFETY - EQUIPMENT

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

INOLECT, LLC

Tel: (225) 751-7535
www.inolect.com

SAFETY - FIRST AID TRAINING

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

SAFETY - FLAME RESISTANT, BREATHABLE GARMENTS

NASCO INDUSTRIES INC.

Tel: (812) 254-7393
www.nascoinc.com

SAFETY - LINEMEN EQUIPMENT

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

SALISBURY BY HONEYWELL

Tel: (630) 343-3800
www.salisburybyhoneywell.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

SAFETY - SUPPLIES

MACNAIR CONSTRUCTION PRODUCTS LTD

Tel: (780) 463-0050
www.mcpl.ca

SAFETY - TOOLS

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

SALISBURY BY HONEYWELL

Tel: (630) 343-3800
www.salisburybyhoneywell.com

SAFETY ATTACHMENT DEVICES

HERCULES INDUSTRIES INC.

Tel: (800) 345-2590
www.herculock.com

SATELLITE - COMMUNICATIONS

MACKAY COMMUNICATIONS

Tel: (919) 850-3100
www.mackaysatellite.com

SCADA - COMMUNICATIONS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

ENCORE NETWORKS

Tel: (703) 318-7750
www.encorenetworks.com

PRODUCTS AND SERVICES

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

SCADA - ENERGY CONTROL SYSTEMS**ABB**

Tel: (514) 856-6266
www.abb.ca

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

SCADA - INSTALLATION SERVICES**S&C ELECTRIC COMPANY**

Tel: (773) 338-1000
www.sandc.com

SCADA SYSTEMS**ABB**

Tel: (514) 856-6266
www.abb.ca

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

EFACEC ADVANCED CONTROL SYSTEMS

Tel: (800) 831-7223
www.efacec-acsc.com

ICX DAQ ELECTRONICS

Tel: (732) 981-0050
www.daq.net

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

QEI INC.

Tel: (908) 512-3699
www.qeiinc.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SYSTEMS WITH INTELLIGENCE INC.

Tel: (289) 562-0126
www.systemswithintelligence.com

SEALS - METERS**INNER-TITE CORP.**

Tel: (508) 829-6361
www.inner-tite.com

SEALS - SECURITY**INNER-TITE CORP.**

Tel: (508) 829-6361
www.inner-tite.com

SECONDARY CONTAINMENT SYSTEM**ANDAX INDUSTRIES LLC**

Tel: (800) 999-1358
www.andax.com

SOLIDIFICATION PRODUCTS INTERNATIONAL, INC.

Tel: (203) 484-9494
www.oilbarriers.com

SECURITY - EQUIPMENT**INNER-TITE CORP.**

Tel: (508) 829-6361
www.inner-tite.com

SMARTER SECURITY SYSTEMS, LTD.

Tel: (512) 328-7277
www.smartersecurity.com

SYSTEMS WITH INTELLIGENCE INC.

Tel: (289) 562-0126
www.systemswithintelligence.com

SENSORS - CURRENT**DIGITALGRID, INC.**

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

SENSORS - CURRENT + VOLTAGE**DIGITALGRID, INC.**

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

SENSORS - FIBER OPTIC**FISO TECHNOLOGIES**

Tel: (418) 688-8065 X 241
www.fiso.com

LUMASENSE TECHNOLOGIES

Tel: (408) 727-1600
www.lumasenseinc.com

SENSORS - TEMPERATURE**DIGITALGRID, INC.**

Tel: 919-844-4866 extn 224
www.digitalgridinc.com

FISO TECHNOLOGIES

Tel: (418) 688-8065 X 241
www.fiso.com

SF6 GAS INSULATED SWITCHGEAR**S&C ELECTRIC COMPANY**

Tel: (773) 338-1000
www.sandc.com

SHEAVES - CONDUCTOR - STRINGING**CONDUX TESMEC INC.**

Tel: (507) 387-8069 • 1-877-854-1750
www.conduxtesmec.com

SIGNS**LEM PRODUCTS INC.**

Tel: (215) 348-9900
www.lemproductsinc.com

PRODUCTS AND SERVICES

SLEEVES - RUBBER, LINEMAN'S

SALISBURY BY HONEYWELL

Tel: (630) 343-3800
www.salisburybyhoneywell.com

SMART GRID SOLUTIONS

LOCKHEED MARTIN

Tel: (610) 354-2538
www.lockheedmartin.com

SOFTWARE - APPLICATION

AGENTIS INC.

Tel: (630) 359-6210
www.agentisenergy.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

SOFTWARE - DATABASE

AGENTIS INC.

Tel: (630) 359-6210
www.agentisenergy.com

SOFTWARE - DOCUMENT MANAGEMENT

VANGUARD SYSTEMS

Tel: (610) 891-7703 (8am - 5pm EST)
www.vansystems.com

SOFTWARE - ELECTRIC DESIGN AUTOMATION

GOTHAM

Tel: (800) 963-1539
www.gothamusa.com

SOFTWARE - T&D LINE DESIGN

CORELOGIC

Tel: (800) 426-1466

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

POWER LINE SYSTEMS, INC.

Tel: (608) 238-2171
www.powline.com

SOFTWARE INTEGRATION

COHESIVE INFORMATION SOLUTIONS

Tel: (678) 233-1280
www.cohesivesolutions.com

LIVEDATA, INC.

Tel: (617) 576-6900
www.livedata.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

SOFTWARE SOLUTIONS

AGENTIS INC.

Tel: (630) 359-6210
www.agentisenergy.com

TRIMBLE

Tel: (720) 587-4551
www.trimble.com/utilities

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

VANGUARD SYSTEMS

Tel: (610) 891-7703 (8am - 5pm EST)
www.vansystems.com

SPACERS - DUCT

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

SPACERS - UNDERGROUND CABLE AND CONDUIT

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000
www.udevices.com

SPLICES & ACCESSORIES - TENSION

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MACLEAN POWER SYSTEMS

Tel: (847) 455-0014
www.macleanpower.com

STEEL - MANUFACTURERS

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

SBB TOWERS

Tel: (450) 968-0800
www.sbb.ca

STEEL - STRUCTURAL

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

SABRE TUBULAR STRUCTURES

Tel: (866) 254-3707
www.sabretubularstructures.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

STEEL PRODUCTS - CUSTOM FABRICATION

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

PRODUCTS AND SERVICES

STICKS - DISCONNECT

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

STICKS - HOT

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

STREETLIGHTING EQUIPMENT

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

STRUCTURE - PREFABRICATED

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

SUBSTATION

ABB

Tel: (514) 856-6266
www.abb.ca

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

PHILADELPHIA GEAR

Tel: (610) 265-3000
www.philagear.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

SUBSTATION - CAD DRAFTING SUPPORT

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SUBSTATION - COMMUNICATION EQUIPMENT

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

POSITRON INC.

Tel: (514) 345-2220
www.positronpower.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

SUBSTATION - COMMUNICATIONS

KALKITECH

Tel: (832) 331-1571
www.kalkitech.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TELKONET

Tel: (240) 912-1800
www.telkonet.com

SUBSTATION - GAS-INSULATED

GRANZOW INCORPORATED

Tel: (704) 845-0223
www.granzow.com

SUBSTATION - METAL-ENCLOSED

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SUBSTATION - MOBILE

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

SUBSTATION - REACTIVE COMPENSATION

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

PRODUCTS AND SERVICES

SUBSTATION - STEEL, STRUCTURE

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

PROMETEK INC.

Tel: (418) 527-4445
www.prometek.net

SBB TOWERS

Tel: (450) 968-0800
www.sbb.ca

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

SUBSTATION - WOOD, TREATED

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

SUBSTATION AUTOMATION

EFACEC ADVANCED CONTROL SYSTEMS

Tel: (800) 831-7223
www.efacec-acsc.com

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

H & L INSTRUMENTS

Tel: (603) 964-1818
www.hlinstruments.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559
www.osii.com

PARADIGM 2 TECHNICAL SOLUTIONS, LLC

Tel: (513) 403-9898
www.paradigm2techsolutions.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SUBSTATION CONTROL BUILDINGS

KEYSTONE ELECTRICAL MANUFACTURING COMPANY

Tel: (515) 661-2775
www.keystoneemc.com

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

SUBSTATION DESIGN & CONSTRUCTION

POWERSECURE, INC

Tel: (919) 604-7646
www.powersecure.com

QUANTA SERVICES

Tel: (713) 629-7600
www.quantaservices.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SUBSTATION FENCING: ANIMAL DETERRENT

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

SUBSTATION FENCING: SECURITY

VANQUISH FENCING INCORPORATED

Tel: (215) 295-2863
www.vanquishfencing.com

SUPPRESSORS - SURGE

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SUPPRESSORS - SURGE - TRANSIENT VOLTAGE

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SURGE PROTECTORS

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SURVEYING, INSTRUMENTS AND EQUIPMENT

ANGLESPLITTER

Tel: (580) 761-7137
www.anglesplitter.com

SUSPENSION ARMS, POLE - STEEL

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

PRODUCTS AND SERVICES

SWITCHES

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SWITCHES - AIR, GROUP-OPERATED

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SWITCHES - CAPACITORS

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SWITCHES - DISCONNECT

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SWITCHES - DISCONNECT 25 TO 800KV

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

SWITCHES - HOOKSTICK, DISCONNECTING

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

SWITCHES - ISOLATION

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SWITCHES - LOWBREAK

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SWITCHES - MOTOR-OPERATED

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SWITCHES - PADMOUNTED

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHES - REGULATOR, BYPASS

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SWITCHES - SAFETY, DISCONNECT DEVICES

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHES - SUBMERSIBLE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHES - SUBSTATION, DISCONNECTING

HUBBELL POWER SYSTEMS INC.

Tel: (573) 682-5521
www.hubbellpowersystems.com

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SOUTHERN STATES, LLC.

Tel: (770) 946-4562
www.southernstatesllc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

PRODUCTS AND SERVICES

SWITCHES - TEST

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SWITCHES - THROWOVER, AUTOMATIC

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHES - TRANSFER

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHES - VACUUM

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHGEAR

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHGEAR - ARC RESISTANT - MEDIUM VOLTAGE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SWITCHGEAR - DC TRACTION

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

SWITCHGEAR - HIGH VOLTAGE

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHGEAR - MEDIUM VOLTAGE RANGE UP TO 44 KV

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

SWITCHGEAR - METAL ENCLOSED

MERSEN CANADA

Tel: (416) 252-9371
www.mersen.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SWITCHGEAR - REBUILDING AND REPAIR SERVICE

MAGNETECH INDUSTRIAL SERVICE

Tel: (330) 830-3500 • 800-837-1614
www.magnetech.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

SWITCHGEAR - SF6

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

SWITCHGEAR - VACUUM

THOMAS & BETTS - UTILITY GROUP

Tel: (800) 326-5282
www.utilitytnb.com

THOMAS & BETTS CANADA - UTILITY DIVISION

Tel: (450) 466-1102, x234
1-800-466-1102, x234
www.tnb.ca

TRAYER ENGINEERING CORPORATION

Tel: (415) 285-7770 • (800) 377-1774
www.trayer.com

PRODUCTS AND SERVICES

SYSTEMS INTEGRATOR

ENSPERIA SOLUTIONS - A BLACK & VEATCH COMPANY

Tel: (303) 520-2513
www.ensperia.com

NOVATECH, LLC

Tel: (410) 753-8300 • (800) 253-3842
www.novatechweb.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

UTILICASE

Tel: (514) 321-4505
www.utilicase.com

VANGUARD SYSTEMS

Tel: (610) 891-7703 (8am - 5pm EST)
www.vansystems.com

T

TAGS

LEM PRODUCTS INC.

Tel: (215) 348-9900
www.lemproductsinc.com

TAP CHANGERS - CONTROLS

REINHAUSEN MANUFACTURING INC. ATT: CHRISTY CRAWFORD

Tel: (731) 562-4127
www.reinhausen.com

TAP CHANGERS - TRANSFORMERS - LOAD, NO-LOAD

MESSERSTROM, INC.

Tel: (636) 680-5978
www.messerstrom.com

POWER CORE ENGINEERING, INC.

Tel: (414) 263-3455
www.pce.com

REINHAUSEN MANUFACTURING INC. ATT: CHRISTY CRAWFORD

Tel: (731) 562-4127
www.reinhausen.com

WAUKESHA COMPONENTS

Tel: (800) 338-5526
www.waukeshaelectric.com

TAPE - MARKING

EMPIRE LEVEL MFG. CORP.

Tel: (262) 368-2000
www.empirelevel.com

TELECOMMUNICATIONS

ACA CONDUCTOR ACCESSORIES

Tel: (864) 486-7361
www.acasolutions.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

SYMMETRICOM

Tel: (978) 232-1422
www.symmetricom.com

TC COMMUNICATIONS

Tel: (949) 852-1972 • 1-800-569-4736
www.tccomm.com

TELECOMMUNICATIONS - CONDUIT

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

TELECOMMUNICATIONS - DC POWER

GARRETTCOM INC.

Tel: (510) 438-9071
www.garrettcom.com

TEMPERATURE MONITORING

FISO TECHNOLOGIES

Tel: (418) 688-8065 X 241
www.fiso.com

TEST - MEASURING EQUIPMENT

OPTIMUM ENERGY PRODUCTS LTD.

Tel: (877) 766-5412
www.optimumenergy.com

ROTEK INSTRUMENT CORP

Tel: (781) 899-4611
www.rotek.com

STRIDER-RESOURCE

Tel: (905) 859-3901
www.strider-resource.com

TEST EQUIPMENT

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

MEGGER

Tel: (214) 333-3201
www.megger.com

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicron
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

PCORE ELECTRIC COMPANY, INC.

Tel: (585) 768-1200
www.pcoreelectric.com

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

TEST EQUIPMENT - AERIAL LIFT

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - CIRCUIT BREAKER

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

PRODUCTS AND SERVICES

TEST EQUIPMENT - CURRENT TRANSFORMER TESTERS

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicon
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

TEST EQUIPMENT - ELECTRICAL

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

TEST EQUIPMENT - FAULT

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

TEST EQUIPMENT - GLOVE

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - HIGH VOLTAGE

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

HIPOTRONICS INC.

Tel: (845) 279-3644
www.hipotronics.com

HV TECHNOLOGIES INC.

Tel: (703) 365-2330
www.hvtechnologies.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

ROSS ENGINEERING CORPORATION

Tel: (408) 377-4621
www.rossengineeringcorp.com

TEST EQUIPMENT - HV IMPULSE

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - HV TEST SETS, PORTABLE

HASTINGS FIBERGLASS PRODUCTS INC.

Tel: (269) 945-9541
www.hfgp.com

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

RCC ELECTRONICS

Tel: (905) 238-6848
www.rcce.com

TEST EQUIPMENT - INSULATION

AEMC INSTRUMENTS

Tel: (508) 698-2115

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - LIGHTNING ARRESTERS

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

TEST EQUIPMENT - METER TEST SETS

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicon
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

TEST EQUIPMENT - MICRO-OHMMETER

AEMC INSTRUMENTS

Tel: (508) 698-2115

TEST EQUIPMENT - OIL

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

RCC ELECTRONICS

Tel: (905) 238-6848
www.rcce.com

TEST EQUIPMENT - RECLOSERS

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - RELAY

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicon
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

PRODUCTS AND SERVICES

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

TEST EQUIPMENT - RENTAL

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

TEST EQUIPMENT - SLEEVE, RUBBER

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

TEST EQUIPMENT - TRANSFORMERS

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

HIGH VOLTAGE INC.

Tel: (518) 329-3275
www.hvinc.com

OMICRON ELECTRONICS CORP. USA

Tel: (781) 672-6200 • 1-800-omicon
www.omicronusa.com

OMICRON ELECTRONICS CORP. USA (WALTHAM)

Tel: (781) 672-6200 • 1-800-OMICRON
www.omicronusa.com

PHENIX TECHNOLOGIES INC.

Tel: (301) 746-8118
www.phenixtech.com

RCC ELECTRONICS

Tel: (905) 238-6848
www.rcce.com

REPTAME EQUIPMENT INC.

Tel: (905) 936-6979
www.reptame.com

TESTING - REGULATORS

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

TESTING - TRANSFORMERS, LIQUID

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TESTING SERVICES

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

RTDS TECHNOLOGIES, INC.

Tel: (204) 989-9700
www.rtds.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TESTING SERVICES - BATTERIES

ANCONA CONTROLS

Tel: (248) 624-5600
www.anconcontrols.com

TESTING SERVICES - CORONA LOCATING

EKLUND INFRARED INC.

Tel: (770) 578-4435
www.coronacamerarental.com

TESTING SERVICES - ELECTRICAL

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TESTING SERVICES - OIL

UTILITY TESTING LABORATORY

Tel: (801) 485-8941
www.ut-labs.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

THERMOGRAPHY

PRIMO INSTRUMENT INC.

Tel: (514) 329-3242
www.primoinc.com

TOOLS

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

WRIGHT TOOL COMPANY

Tel: (800) 321-2902
www.wrighttool.com

TOOLS - EQUIPMENT/RENTAL

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

TOOLS - WIRE & CABLE

SEATEK COMPANY, INC.

Tel: (203) 324-0067
www.seatekco.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666
www.tallmanequipment.com

TOOLS CABLE - UNDERGROUND CABLE INSTALLATION

DCD DESIGN & MANUFACTURING LTD.

Tel: (888) 794-8357
www.dcdesign.com

TOWER - TRELLIS AND TUBULAR

FABRIMET INC.

Tel: (819) 472-1164
www.fabrimet.com

LOCWELD INC.

Tel: (450) 659-9661
www.locweld.com

MVA POWER INC

Tel: (450) 589-0445
www.mvapower.qc.ca

PRODUCTS AND SERVICES

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS - ANTENNA

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS - EMERGENCY T & D

QUANTA SERVICES

Tel: (713) 629-7600
www.quantaservices.com

SALAZ INC.

Tel: (647) 435-4970
www.salazinc.com

SBB TOWERS

Tel: (450) 968-0800
www.sbb.ca

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS - POLES

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274
www.distran.com

SAE TOWERS, LTD.

Tel: (281) 763-2282
www.saetowers.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS - TELECOMMUNICATION

MVA POWER INC

Tel: (450) 589-0445
www.mvpower.qc.ca

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS - WIRELESS

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS, TRANSMISSION - RETROFIT

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS, TRANSMISSION - STEEL

LOCWELD INC.

Tel: Tel.: (450) 659-9661
www.locweld.com

SBB TOWERS

Tel: (450) 968-0800
www.sbb.ca

THOMAS & BETTS - STEEL STRUCTURES DIVISION

Tel: 1-877-2TB-MEYER
www.meyersteelstructures.com

THOMAS & BETTS CANADA - STEEL STRUCTURES DIVISION

Tel: 905-858-1010, x3782
www.meyersteelstructures.com

TOWERS, TRANSMISSION - WOOD, LAMINATED

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

TOWERS, TRANSMISSION - WOOD, SOLID

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274
www.distran.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991
www.hughesbros.com

TRACKED VEHICLES

ASPLUNDH TREE EXPERT CO.

Tel: (800) 248-8733
www.asplundh.com

TRAILERS - CABLE REEL

REDI HAUL TRAILERS

Tel: (800) 233-0382
www.redihaul.com

PRODUCTS AND SERVICES

TRAILERS - RENTAL AND LEASING

WELLS CARGO

Tel: (800) 348-7553
www.wellscargo.com

TRAINING

DAVID CHILDRESS ENTERPRISES

Tel: (678) 386-9132
www.davidchildressenterprises.com

DOBLE ENGINEERING CO.

Tel: (617) 393-2908
www.doble.com

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

SIEMENS POWER ACADEMY (SIEMENS PTI)

Tel: (518) 395-5186
www.usa.siemens.com/energy/pti-education

WAUKESHA COMPONENTS

Tel: (800) 338-5526
www.waukeshaelectric.com

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

TRAINING - REGULATORY COMPLIANCE

CN UTILITY CONSULTING

Tel: (707) 829-1018
www.cnutility.com

GENERAL PHYSICS (GP)

Tel: (410) 290-2446
www.gpworldwide.com

GLOBAL TRAINING SOLUTIONS INC.

Tel: (416) 806-5777
www.globaltrainingsolutions.ca

TRANSDUCERS

AMETEK POWER INSTRUMENTS

Tel: (585) 263-7700
www.ametekpower.com

TRANSDUCERS - ELECTRIC

FLEX-CORE DIV.

Tel: (614) 889-6152
www.flex-core.com

TRANSFORMER - OIL

PETRO CANADA

Tel: 1-800-268-5850

TRANSFORMER - VACUUM DRY-OUT SYSTEMS

BARON USA

Tel: (931) 528-8476
www.baronusa.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMER COMPONENTS

LAKEVIEW METALS, INC.

Tel: (847) 838-9800
www.lvmetals.com

WAUKESHA COMPONENTS

Tel: (800) 338-5526
www.waukeshaelectric.com

TRANSFORMER DIAGNOSIS

WEIDMANN DIAGNOSTIC SOLUTIONS INC

Tel: (800) 811-2284
www.weidmann-electrical.com

COMMERCIAL
EQUIPMENT CORP.

Terex TM105 on Prinoth GT3000

Eastern Canada
1-866-816-8941

Western Canada
1-877-513-6848

**Bucket Trucks, Digger Derricks,
Stringing Gear, and more...**
for Rent, Lease or Purchase

View Our Inventory
www.nescosales.com

NESCO Commercial Equipment Corp. is an authorized distributor for Nisco, LLC

Circle 22 on Reader Service Card

PRODUCTS AND SERVICES

TRANSFORMER MONITORING

ADVANCED POWER TECHNOLOGIES

Tel: (973) 328-3300
www.advpowertech.com

WESCHLER INSTRUMENTS

Tel: (440) 238-2550
www.weschler.com

TRANSFORMER MOUNTING PADS

CONCAST INC.

Tel: (507) 732-4095
www.concastinc.com

TRANSFORMERS

ABB

Tel: (514) 856-6266
www.abb.ca

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

OLDCASTLE PRECAST – TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - AUTO TRANSFORMERS

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - DISTRIBUTION

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

TRANSFORMERS - DISTRIBUTION, PADMOUNTED

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

TRANSFORMERS - DISTRIBUTION, POLE-TYPE

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

TRANSFORMERS - DISTRIBUTION, SUBSTATION-TYPE

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

TRANSFORMERS - DISTRIBUTION, SUBSURFACE

MOLONEY ELECTRIC, INC.

Tel: (416) 534-9226
www.moloneytx.com

TRANSFORMERS - DRY OUT SYSTEMS

VELCON FILTERS, LLC.

Tel: (719) 531-5855 • 1-800-531-0180
www.velcon.com/systems

TRANSFORMERS - DRY TYPE

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

HAMMOND POWER SOLUTIONS INC.

Tel: (519) 822-2441
www.hammondpowersolutions.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

TRANSFORMERS - FIELD REPAIRS

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - INSTRUMENT

FLEX-CORE DIV.

Tel: (614) 889-6152
www.flex-core.com

TSTM

Tel: (605) 334-2924
www.ts-tm.com

PRODUCTS AND SERVICES

TRANSFORMERS - INSTRUMENT, CURRENT

FLEX-CORE DIV.

Tel: (614) 889-6152
www.flex-core.com

POLYCAST INTERNATIONAL

Tel: (204) 632-5428
www.polycastinternational.com

TRANSFORMERS - LARGE POWER

CG POWER SYSTEM INC.

Tel: (204) 474-5775
www.cgglobal.com

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

TRANSFORMERS - LARGE POWER, 10,001 KVA AND LARGER

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - MAINTENANCE

S&C ELECTRIC COMPANY

Tel: (773) 338-1000
www.sandc.com

TRANSFORMERS - MAINTENANCE/REPAIRS

MAGNETECH INDUSTRIAL SERVICE

Tel: (330) 830-3500 • 800-837-1614
www.magnetech.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - MEDIUM & LARGE POWER

BELYEA COMPANY, INC.

Tel: (610) 515-8775
www.belyeapower.com

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

OLDCASTLE PRECAST - TRUFIRE WALL

Tel: 888-965-3227
www.oldcastleprecast.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - MOBILE

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

TRANSFORMERS - MONITORS

QPS PHOTRONICS INC

Tel: (514) 697-4728
www.qpsconditionmonitoring.com

TRANSFORMERS - POWER

DELTA STAR, INC. (LYNCHBURG)

Tel: (800) 368-3017
www.deltastar.com

DELTA STAR, INC. (SAN CARLOS)

Tel: (800) 892-8673
www.deltastar.com

EQUISALES

Tel: (713) 733-3999
www.equisales.com

SUPERPOWER, INC.

Tel: (518) 346-1414
www.superpower-inc.com

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

VIRGINIA TRANSFORMER

Tel: (540) 345-9892
www.vatransformer.com

WAUKESHA ELECTRIC SYSTEMS, INC.

Tel: (800) 835-2732
www.waukeshaelectric.com

TRANSFORMERS - REBUILDING AND REPAIR SERVICES

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636
www.surplechv.com

TRANSFORMERS - SMALL POWER

TSTM

Tel: (605) 334-2924
www.ts-tm.com

TRANSFORMERS - SPLITCORE

FLEX-CORE DIV.

Tel: (614) 889-6152
www.flex-core.com

PRODUCTS AND SERVICES

TRANSFORMERS - USED, REBUILT

SURPLEC HV SOLUTIONS

Tel: (819) 821-3636 • 1-877-996-3636

www.surplechv.com

TRANSMISSION - UNDERGROUND

DOW WIRE & CABLE

Tel: 1-800-441-4DOW

www.dowwireandcable.com

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000

www.udevices.com

TRANSMISSION AND DISTRIBUTION LINE

DIS-TRAN STEEL, LLC

Tel: (318) 448-0274

www.distran.com

DOW WIRE & CABLE

Tel: 1-800-441-4DOW

www.dowwireandcable.com

MVA POWER INC

Tel: (450) 589-0445

www.mvapower.qc.ca

TRANSMITTERS

DIGITALGRID, INC.

Tel: 919-844-4866 extn 224

www.digitalgridinc.com

TRAVELERS - CONDUCTING-STRINGING

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750

www.conduxtesmec.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666

www.tallmanequipment.com

TREATING SERVICES - CROSSARMS

DIS-TRAN WOOD PRODUCTS, LLC

Tel: (318) 448-0274

www.distran.com

TREATING SERVICES - INSULATING OIL

IPT COMPANY

Tel: (727) 543-4601

www.iptcompany.com

TREE TRIMMING

ASPLUNDH TREE EXPERT CO.

Tel: (800) 248-8733

www.asplundh.com

HUGHES BROTHERS INC.

Tel: (402) 643-2991

www.hughesbros.com

WRIGHT TREE

Tel: (800) 882-1216

wrighttree.com

TREE TRIMMING EQUIPMENT

ASPLUNDH TREE EXPERT CO.

Tel: (800) 248-8733

www.asplundh.com

DUECO INC.

Tel: (262) 547-8500

www.dueco.com

TALLMAN EQUIPMENT CO

Tel: (630) 860-5666

www.tallmanequipment.com

TRENCH - CONCRETE

CONCAST INC.

Tel: (507) 732-4095

www.concastinc.com

TRUCKS AND VAN INTERIOR EQUIPMENT

FLEXI-SHELF SYSTEMS

Tel: (905) 337-0939

www.flexi-shelf.com

U

UNDERGROUND CONSTRUCTION EQUIPMENT

CONDUX TESMEC INC.

Tel: (507) 387-8069 • 1-877-854-1750

www.conduxtesmec.com

UNDERGROUND DEVICES INC.

Tel: (847) 205-9000

www.udevices.com

UNINTERRUPTIBLE POWER SUPPLIES

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

SOLIS ENERGY

Tel: (407) 339-6786

www.solisenergy.com

UPS SYSTEMS AND SUPPLIES

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

UTILITY AUTOMATION

OPEN SYSTEMS INTERNATIONAL, INC.

Tel: (763) 551-0559

www.osii.com

S&C ELECTRIC COMPANY

Tel: (773) 338-1000

www.sandc.com

V

VAULTS, UNDERGROUND - CONCRETE

CONCAST INC.

Tel: (507) 732-4095

www.concastinc.com

VEGETATION MANAGEMENT

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880

www.arbormetricssolutions.com

ASPLUNDH TREE EXPERT CO.

Tel: (800) 248-8733

www.asplundh.com

CN UTILITY CONSULTING

Tel: (707) 829-1018

www.cnutility.com

ENVIRONMENTAL CONSULTANTS INC. (ECI)

Tel: (800) 919-9274
www.eci-consulting.com

W.I.R.E. SERVICES

Tel: (204) 480-5800
www.wireservices.ca

WRIGHT TREE

Tel: (800) 882-1216
wrighttree.com

VIDEO SURVEILLANCE

SYSTEMS WITH INTELLIGENCE INC.

Tel: (289) 562-0126
www.systemswithintelligence.com

VISUAL INSPECTION

ARBORMETRICS SOLUTIONS LTD

Tel: (407) 339-1733 • (866) 685-1880
www.arbormetricssolutions.com

W

WATER - PURIFICATION AND FILTRATION EQUIPMENT

STORMWATERX

Tel: (800) 680-3543
www.stormwaterx.com

WIRE - SEALS

INNER-TITE CORP.

Tel: (508) 829-6361
www.inner-tite.com

WIRES AND CABLES - ELECTRICAL

C.J. ENTERPRISES

Tel: (818) 996-4131
www.cjenterprises.com

DOW WIRE & CABLE

Tel: 1-800-441-4DOW
www.dowwireandcable.com

ELECTRONIC TECHNOLOGIES INTERNATIONAL

Tel: (920) 563-0840
www.etimfg.com

GENERAL CABLE COMPANY

Tel: (416) 756-7225
www.generalcable.com

OLDCASTLE ENCLOSURE SOLUTIONS - PLASTIBETON

Tel: 888-868-5214
www.oldcastleprecast/enclosures

SUPERPOWER, INC.

Tel: (518) 346-1414
www.superpower-inc.com



Weather Resistant Solid Brass Padlocks
Made to your specifications in the U.S.A.

HERCULOCK
Manufactured in the U.S.A.

HERCULES INDUSTRIES, INC.
Manufacturer of HERCULOCK Padlocks
P.O. Box 197 • Prospect, Ohio 43342
Toll Free: 1-800-345-2590
Fax: (740) 494-2274
www.HERCULOCK.com

Circle 15 on Reader Service Card



Ferraz Shawmut is now

mercen

We've shortened our name. And increased your expertise in the safe and reliable transmission, distribution, and control of power. The next level is waiting for you at fsisnowmercen.com/us/CAETD1

mercen.com

Mersen
Toronto, Canada
T: 416-252-9371

Circle 20 on Reader Service Card



Belyea COMPANY
ELECTRICAL POWER SYSTEMS

- Transformers
- Generators
- Switchgear
- Turbines
- Circuit Breakers
- Motors
- Control Panels
- Boilers
- Complete Substations
- Complete Power Plants

P: 610.515.8775 F: 610.258.1230
2200 Northwood Avenue, Easton, PA 18045
sales@belyeapower.com

www.belyeapower.com

Circle 2 on Reader Service Card

ADVERTISERS INDEX

RSC#	COMPANY	WEB SITE	PAGE #
1	Automation Insight	www.automationinsights.com	23
2	Belyea Company	www.belyeapower.com	115
3	Bronto Skylift	www.bronto.fi	40
4	Cigré Canada	www.cigre.ca	57
5	Condux Tesmec Inc.	www.conduxtesmec.com	59
6	DIGIALGRID	www.digitalgridinc.com	41
7	Doble Engineering Co.	www.doble.com	33
8	Dow Wire & Cable	www.dowinside.com	7
9	Efacec Advanced Control Systems	www.efacec-ac.com	25
10	Enspira Solutions	www.enspiria.com	22
11	GarrettCom Inc.	www.garrettcom.com	10
12	General Physics	www.gpworldwide.com/shop/ceh/	15
13	H & L Instruments	www.hlinstruments.com	42
14	Hastings Fiberglass Products	www.hfgpgrounding.com	19
15	Hercules Industries, Inc.	www.herculock.com	115
16	High Voltage	www.hvinc.com	35
17	Hugues Brothers	www.hughesbros.com	53
18	Inner-Tite Corp.	www.inner-tite.com	48
19	MacLean Power Systems	www.maclepower.com	27
20	Mersen Canada	www.mersen.com	115
21	MVA Power Inc.	www.mvpower.com	28
22	Nesco Sales & Rentals	www.nescosales.com	111
23	Novatech LLC	www.novatechweb.com	INSIDE FRONT COVER
24	Oldcastle Precast	www.oldcastleprecast.com	12-37
25	Open Systems International	www.osii.com	1
26	Phenix Technologies	www.phenixtech.com	13
27	Qualitrol	www.qualitrolcorp.com	FRONT COVER
28	RTDS Technologies	www.rtds.com	55
29	Schweitzer Engineering Industries Inc.	www.selinc.com	9
30	S&C Electric Company	www.sandc.com	21
31	Smart Grid RoadShow	www.smartgridroadshow.com	INSIDE BACK COVER
32	Surplec HV Solutions	www.surplechv.com	46
33	TSTM	www.ts-tm.com	73
34	Tallman Equipment	www.tallmanequipment.com	17
35	TC Communications	www.tccomm.com	3
36	Thomas & Betts	www.tnb.com/utility	11
37	Underground Devices	www.udevices.com	30
38	Utilicase	www.utilicase.com	BACK COVER
39	Utilimetrics	www.utilimetrics.org	31
40	Valmont Newmark	www.valmont-newmark.com	29
41	W.I.R.E. Services	www.wireservices.ca	38
42	Winola Industrial Inc.	www.winolaindustrial.com	5



Smart Grid **RoadShow**

Montreal, QC

August 29-31, 2011

www.smartgridroadshow.com

HOST



2010 HIGHLY COMMENDED IET INNOVATION AWARD FOR ASSET MANAGEMENT :
EPS-M (SAM) SOFTWARE SOLUTION

It's all about
knowing
where to
focus.



® Registered trademark of Utilicase

EPS-M®, by Utilicase, can help:

EPS-M® is an asset optimization and investment planning platform, developed specifically for the power utility industry.

Designed to complement existing IT asset management applications, EPS-M® provides generation, transmission and distribution owners and operators with comprehensive analytical tools to:

- Assess effective age and **PERFORMANCE LEVELS OF CRITICAL ASSETS**
- **ENABLE PROACTIVE** power system operation
- Optimize maintenance and **EXTEND ASSET LIFE**
- **IDENTIFY** priorities and plan future investments

Focus with EPS-M®. Call 1-888-834-4505 to schedule a presentation.

www.utilicase.com

UTILICASE