



3M™ Aluminum Conductor Composite Reinforced

3M™ Gridlines©

Updates on 3M ACCR

PLS-CADD™ data files on 3M™ ACCR now available

Users of PLS-CADD™ design software now have access to the basic set of cable files for 3M™ ACCR, greatly increasing design options for utilities interested in evaluating high performance conductors. PLS-CADD, from Power Line Systems, Inc. of Madison, Wisconsin, is a Windows-based, three-dimensional modeling program used by more than 500 organizations around the world to design overhead power lines. (Continued on page 4)

Going global

3M™ ACCR serves major Chinese metropolis

Shanghai Electric Power Company Ltd. has become the first utility outside the United States to install 3M ACCR.

Shanghai Electric is a publicly owned utility whose major shareholders are China Power Investment Corp. and East China Power Development Company. It serves the Shanghai metropolitan area, the largest city in the People's Republic of China and the eighth largest metropolis in the world. (Continued on page 4)

If you can't stand the heat...

3M™ ACCR in challenging application

When Arizona Public Service Company (APS) investigated alternatives for increasing capacity into downtown Phoenix, building new or higher towers to use conventional steel conductor seemed out of the question; not only would this be expensive and disruptive, but land acquisition and permitting issues in the heavily built-up residential area could hold up the project indefinitely.

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Download the new 3M data FREE by clicking here.

Trading places

3M™ ACCR moves to new home

3M High Capacity Conductors, which offers 3M™ ACCR, is now part of 3M Electrical Markets Division (EMD).

3M EMD Offerings Include:



- Electrical insulating tapes
- Underground cable splices and terminations (including 3M-invented cold-shrink technology)
- Cold shrink sealing and insulating tubes
- Heat-shrinkable tubing and molded shapes for electrical insulation
- Cable arc- and fire-resistant tapes
- Wire terminals and tools
- Wire marking products
- Cable ties

EMD develops and markets products for utility and industrial power businesses, electrical construction and maintenance, and electrical and electronic device

manufacturers (see box). Because of EMD's expertise and global presence in the utility industry, combined with their reputation for supplying innovative, highly reliable products, this move will enhance 3M's ability to serve utility customers by offering a broader range of technology solutions and an extended network of technical and marketing support.

Congratulations, Tracy Anderson

Coinciding with the move to EMD, Tracy Anderson, who has been the leader of the 3M ACCR program since its inception, as well as one of the original



inventors of the technology, has moved on to head up 3M's new Alternative Energy Program, focusing on developing 3M technologies for solar, wind and other emerging energy platforms. Tracy's move underlines the importance 3M places on the expanding energy market.

Welcome, Tim Koenig

3M High Capacity

Conductor's new business leader is Tim Koenig, who comes from his most recent assignment as Managing Director of 3M Denmark.

Prior to that,

he was

Global

Business

Manager for

the specialty

chemicals

business



within 3M Electronic Markets

Materials Division.

According to Tim, integrating the High Capacity Conductor Program into EMD is evidence of 3M's commitment to 3M ACCR and the utility industry. "We see a growing need for solutions that help relieve transmission constraints – not just in more mature economies, but also in developing economies like China and India," he states. "This new alignment, combined with 3M's continuing investment in 3M ACCR, increases our ability to serve our customers on a global scale. It also emphasizes that 3M ACCR has

completely transitioned from a developing technology to proven, reliable, industry-standard solution."

More amps and more reliability

Utility chooses 3M™ ACCR to boost capacity on key line segment

Officials of Colorado's Platte River Power Authority recently announced their decision to replace a three-mile segment of line between Fort Collins and Loveland with 3M™ ACCR, starting this fall.

Platte River Power Authority generates reliable, low-cost and environmentally responsible electricity for its owner-communities of Estes Park, Fort Collins, Longmont and Loveland, Colorado. This makes it the first municipally-owned utility to install the conductor. Its facilities are located along the Front Range and northwestern Colorado, as well as near Medicine Bow, Wyoming.

According to Tim Koenig, director of the 3M High Capacity Conductor Program, the growing number and types of utilities installing 3M ACCR is vital to the

technology's acceptance in the marketplace.

"To me, the fact that our market is expanding to a variety of customers demonstrates that this technology has matured from being a promising new material into a proven, reliable solution for breaking through transmission bottlenecks," he says. "After six successful years of field tests and commercial installations, it has begun to take its place as a valuable addition to the power transmission engineer's toolkit."

3M ACCR data proven reliable (continued from page 1)

3M based their data on extensive real-world testing, with the support of the Department of Energy and several utilities, to validate performance against theoretical models, allowing line upgrades to be designed to the highest engineering standards. In fact, several commercial installations of 3M ACCR have already been designed using stress/strain curves and sag data on PLS-CADD software. The

data files are available on the 3M ACCR website at www.3m.com/accr.

Shanghai Electric seeks to save cost and time (continued from page 1)

It deployed 3M ACCR to increase capacity on a key 10-mile line to meet growing peak demand.

"Interest from U.S. and foreign utilities continues to gain momentum as decision-makers realize we have a proven and ready solution to common problems that limit the capacity of conventional transmission lines, often causing constraints and bottlenecks," said Tim Koenig, director of the 3M High Capacity Conductor Program.

"We hope 3M's ACCR can help us by saving total project cost and increasing line transmission capacity," said Mr. Pan, Shanghai Power Yanggao project designer.

"Based on the October 14 line energizing, it works well, and we are looking forward to running more performance data to prove it in the future three to five months. After passing a real project's running test, we believe 3M's ACCR will have a

brilliant future in field application and will help us enhance the city transmission network."

Mr. Koenig also noted that, because 3M's ACCR is installed on existing structures and can match the sag and tension of the existing conductor with less weight, utilities can reduce the costs and risks associated with major transmission construction projects, without adding any risk to the existing system.

"3M has invested in a state-of-the art manufacturing infrastructure to meet the growing demand for alternative solutions to problems afflicting the power grid. Process Design and Control is one of 3M's 45 core technology platforms. Plus, 3M's global presence with operations in nearly 60 countries enables us to provide reliable technologies where our customers are located," he continued.

APS installs 3M (continued from page 1)

Because of rapid demand and supply growth in the area, however, APS couldn't afford to delay the project any longer than necessary.

This led APS officials to investigate a number of alternative conductor technologies, including 3M™ ACCR.

A team of five APS engineers visited 3M's ACCR facilities in Minnesota for an in-depth review of the company's testing methodologies, engineering support and manufacturing capabilities. As part of their review, APS wanted to personally substantiate published test data on all the materials under consideration.

When their comprehensive review was complete, APS concluded that 3M offered the best fit for their project in terms of both reliability and performance, as well as the most complete package of integrated accessories, design and installation support. Therefore, they decided to replace six circuit miles of conductor with 3M ACCR.

The process, from design to energizing the new line – which would have taken several years if new tower construction had been required – took about a year and a half. Capacity of the line was increased, with no visual impact, and

with very little disruption to the public.

Almost immediately after installation, the new line was put to a severe test, as Phoenix sweltered through its hottest June on record, followed by a severe heat wave in July. 3M ACCR performed flawlessly, however – even at ambient temperatures soaring to 118° F.

Winner takes all

At the last IEEE Transmission and Distribution Conference and Exposition in Dallas, Reagan Moore of Austin Energy was the winner of an Apple iPod®, awarded as part of a special promotion -- visitors to the 3M booth who completed a survey after watching a video presentation on 3M™ ACCR were automatically entered into the drawing, which was held at the close of the show.

Congratulations to Reagan – and thanks to all our participants for your interest in 3M ACCR!

Join us at the 2008 IEEE Transmission and Distribution Conference in Chicago, April 21st – 24th!