

3M's New High-Capacity Overhead Conductor is Chosen by Western Area Power Administration to Boost Electricity Transmission on Key Line Along Colorado River in Arizona

Twenty-Mile Installation is First Stage of Upgrade from Topock Substation to Lake Mead, Using Existing Towers; Western is Second Major Utility to Apply ACCR as Bottleneck Solution

The Western Area Power Administration (Western), which delivers about 40 billion kilowatt-hours of hydroelectric power annually in 15 western and central states, has chosen 3M's new breakthrough metal matrix, high-capacity electricity conductor to replace a key conventional power line in western Arizona.

Western is one of four power marketing administrations within the U.S. Department of Energy, and serves nearly 700 wholesale power customers in a 1.3 million-square-mile area, including some 300 municipalities, as well as public utilities and utility districts, energy cooperatives, power marketers, irrigation districts, Native American tribal communities and government agencies.

Western becomes the second major utility to deploy 3M's Aluminum Conductor Composite Reinforced (ACCR) to boost transmission capacity to accommodate growing demand. The ACCR, which is heat-sag resistant, can carry more than twice the power of conventional lines of the same diameter, without requiring new or larger towers. In addition, this revolutionary metal composite material can help overcome aging concerns associated with organic-based polymer composites. The ACCR was developed as a solution to thermally constrained transmission bottlenecks that increasingly have plagued electricity grids in recent years, causing brownouts and blackouts across the country.

Xcel Energy, which serves 3.3 million electricity customers in 11 states, activated its first ACCR line in the Minneapolis-St. Paul metropolitan area in May, becoming the first commercial user of 3M's new composite conductor technology.

Both Western and Xcel were among several utilities that field-tested the ACCR in a broad range of rugged conditions over several years during the product's development stage. It was also tested extensively at the Department of Energy's Oak Ridge National Laboratories.

"It's extremely gratifying that two major utilities that tested the ACCR are putting it to use commercially," said Tracy Anderson, business development manager for 3M's composite conductor program. "Exhaustive test data have been compiled in the field, under actual local operating conditions, demonstrating that the ACCR does everything expected of it. We believe it will make an important contribution to strengthening the national grid."

A 230-kV ACCR will be installed initially on a 20-mile stretch of the Topock-Davis line, which parallels the Colorado River along Arizona's western border with California. Eventually, the new conductor will be extended northward an additional 60 miles to Lake Mead at Boulder Dam, in Nevada. The area of service includes fast-growing communities such as Lake Havasu City, Kingman and Bullhead City in Arizona; Laughlin, Nev.; and Needles, Calif.

Installation is expected to begin in January 2006 and be completed by April 2006. The line being replaced by the ACCR was installed in the 1950s, when the region along the Colorado River was sparsely populated.

The ACCR, a new type of bare overhead conductor containing a multistrand core of heat-resistant aluminum

matrix composite wires, retains its strength at high temperatures and is not adversely affected by environmental conditions, such as moisture or UV exposure. Its lightweight and reduced thermal expansion properties allow the conductor to be installed on existing towers, and requires no visual changes to a line or additional rights of way. The power line has been proven under a broad range of extreme conditions, such as saltwater corrosion, high winds, vibration, and extreme heat and cold.

3M teamed with various companies, whose expertise in certain components helped to make 3M's ACCR viable. Key contributors include Wire Rope Industries, Nexans Inc., Preformed Line Products Co. and Alcoa Conductor Accessories. Organizations playing key supporting roles in laboratory and field testing of the technology include: National Electric Energy Testing, Research and Applications Center (NEETRAC); Kinectrics; Oak Ridge National Laboratory; the U.S. Department of Energy; and Western Area Power Administration.

The technology has been recognized by R&D Magazine with an R&D 100 award as one of the most technologically significant products introduced into the marketplace and by the Minnesota High Tech Association with a Tekne Award for innovative development.

More information about the 3M Composite Conductor is available at www.3M.com/accr.

About 3M -- A Global, Diversified Technology Company

Every day, 3M people find new ways to make amazing things happen. Wherever they are, whatever they do, the company's customers know they can rely on 3M to help make their lives better. 3M's brands include Scotch, Post-it, Scotchgard, Thinsulate, Scotch-Brite, Filtrete, Command and Vikuiti. Serving customers in more than 200 countries around the world, the company's 67,000 people use their expertise, technologies and global strength to lead in major markets including consumer and office; display and graphics; electronics and telecommunications; safety, security and protection services; health care; industrial and transportation. For more information, including the latest product and technology news, visit www.3M.com.

Scotch, Post-it, Scotchgard, Thinsulate, Scotch-Brite, Filtrete, Command and Vikuiti are trademarks of 3M.

3M Public Relations Colleen Harris, 651-733-1566 or LVM Group Inc. Bob Rumerman, 212-499-6567 bob@lvmgroupp.com or Andrea Harvey, 212-499-6568 andrea@lvmgroupp.com or Western Area Power Administration LaVerne Kyriss, 720-962-7051 kyriss@wapa.gov

<https://news.3m.com/2005-06-15-3Ms-New-High-Capacity-Overhead-Conductor-is-Chosen-by-Western-Area-Power-Administration-to-Boost-Electricity-Transmission-on-Key-Line-Along-Colorado-River-in-Arizona>