

Silicon Valley Power Chooses 3M's ACCR to Boost Transmission without Need to Expand Towers or Right of Way

- Light Weight, High-Capacity Aluminum Matrix Conductor Will Serve City of Santa Clara, California -

ST. PAUL, Minn.--([BUSINESS WIRE](#))--Silicon Valley Power, the 112-year-old electric utility established by the City of Santa Clara, California, will install the 3M Aluminum Conductor Composite Reinforced (3M ACCR) on an existing line to substantially boost capacity without having to enlarge the towers or the right of way.

Silicon Valley Power will re-conductor a 60kV line that principally links its Scott Receiving Station with the Northwestern Substation, through a narrow right of way in an urban neighborhood. Reconductoring with 3M ACCR allows the line to be upgraded with minimal disturbances to the neighborhood. The utility serves just over 51,000 residential, commercial and industrial customers in a 19-square-mile area with a population exceeding 115,000. Its service area covers a significant portion of the Silicon Valley technology community, and includes major corporations such as Intel, Sun Microsystems and Applied Materials.

"We needed a way to significantly increase transmission capacity without the extra cost of making major structural changes," says Kevin Keating, manager of engineering for Silicon Valley Power. "3M ACCR fit our needs exactly and at quite a savings over other alternatives."

Silicon Valley Power joins a growing roster of utilities that have deployed 3M ACCR in a variety of circumstances in which greater capacity is needed to relieve transmission bottlenecks while minimizing environmental and economic impact, both in urban and rural settings. The list includes Western Area Power Administration; Xcel Energy; Alabama Power, a unit of Southern Company; Arizona Public Service Corporation; Allegheny Power, and Platte River Power Authority in the United States, as well as Shanghai Electric in China, ISA Group's Companhia de Transmissão de Energia Elétrica Paulista (CTEEP) in Brazil, and British Columbia Transmission Corporation (BCTC) in British Columbia, Canada, among others.

"3M ACCR has become widely recognized as a proven, dependable solution for many of the problems that affect the grid, and it's available to industry right now," says Tim Koenig, director of the 3M High Capacity Conductor Program. "One of the most compelling attributes of 3M's ACCR as an upgrade to existing lines is that it can relieve a utility of the costs, risks and environmental concerns of enlarging towers or expanding rights of way. Also, because it can match the sag and tension of the existing conductor with less weight, utilities can reduce disruption to neighborhoods or the environment without adding risk to the existing system."

The breakthrough high-capacity aluminum matrix conductor can carry twice the current of conventional steel-core conductors of the same diameter without larger towers, even across long spans. Its low sag, strength and durability result from its core, which is composed of aluminum oxide (alumina) fibers embedded in high-purity aluminum. The constituent materials are chemically compatible with each other and can withstand high temperatures without adverse chemical reactions or any appreciable loss in strength. The conductor also is highly resistant to corrosion and has the durability typically associated with all-aluminum conductors.

3M ACCR was developed with the support of the U.S. Department of Energy, which tested the conductor at Oak Ridge National Laboratory (ORNL) in Tennessee, and with early contributions by the Defense Advanced Research Projects Agency. The ORNL tests demonstrated the conductor's integrity after exposure to temperatures even higher than the rated continuous operating temperature of 210 degrees Celsius. In addition to testing installations at Oak Ridge, 3M ACCR has been in use, both in continuous field tests and commercial

operation, for several years, under a wide range of harsh climate conditions. The conductor has met all performance and reliability expectations and has never experienced a failure in the field, in either installation or operation.

3M holds at least 18 patents on this new technology. 3M ACCR 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.

3M ACCR is offered by 3M's Electrical Markets Division (EMD), which designs, manufactures and markets products for electrical utilities, electrical construction and maintenance, and electrical/electronic device manufacturers. EMD has more than 60 years of experience serving utility customers with highly reliable products, including high capacity transmission conductors; power cable splices and terminations; electrical wire connectors, terminals and tools; wire marking products; cable ties; electrical insulating tapes; electromagnetic shielding and absorbing materials; heat shrinkable tubing and molded shapes for electrical insulation; and cold shrink sealing and insulating tubes.

More information about the 3M high capacity conductor is available at www.3M.com/accr.

About Silicon Valley Power

Silicon Valley Power is the trademark adopted for use by the century-old Electric Department of the City of Santa Clara, California. Silicon Valley Power provides power for about 51,000 customers, including Intel, Applied Materials and National Semiconductor. It also is an active participant in the wholesale energy markets in the Western United States.

About 3M

A recognized leader in research and development, 3M produces thousands of innovative products for dozens of diverse markets. 3M's core strength is applying its more than 40 distinct technology platforms – often in combination – to a wide array of customer needs. With \$24 billion in sales, 3M employs 75,000 people worldwide and has operations in more than 60 countries. For more information, visit www.3M.com.

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