

Distribution Automation

Dairyland Power Increases Services And Reduces Costs With Telecommunications Project

Dairyland's Distribution Automation solution provides reliable real time visibility of the substation meters, breakers, regulators, capacitor banks as well as communications for Automatic Meter Reading to Dairyland and its member cooperatives. There were several issues that drove Dairyland to this solution including:

1. **Termination of analog cell phone services.** Dairyland like many other utilities across the country used "bag" phones to access substation meters for monthly readings. Service to these phones is not guaranteed after February 18, 2008, and service providers have already been reducing service levels. Dairyland had to find an alternative communications at 350 substations.

2. **Desire for Supervisory Control And Data Acquisition (SCADA) at distribution substations.** Dairyland's distribution cooperatives were increasingly interested in having their substations "visible" in their offices. Two cooperatives had participated in pilots of a scaled down version of Dairyland's Energy Management System (EMS), and others were asking for similar services.

3. **Installation of Automatic Meter Reading Systems Required Communication To All Substations.** All of Dairyland's cooperatives either have or will have AMR systems within the next two years. One cooperative requested Dairyland install a cooperative purchased 220 Mhz radio system to communicate between their office and substations. The cooperative system was installed in parallel to a Dairyland radio system (900 Mhz). Additional cooperatives were requesting telecom services from Dairyland, and the telecom staff had a project backlog of 2 years.

4. **Dairyland was spending \$1 million a year on telecom leased services.** Dairyland staff was not satisfied with the level of service provided by the several communications companies covering Dairyland's 44,500 square mile service area. Bringing telecommunications services in house would save money and provide more reliable service.

5. **Physical and cyber security requirements for control systems were increasing from the North American Electric Reliability Council (NERC) and the Federal Energy Regulatory Commission (FERC).** These requirements had Dairyland examining all control systems communications to determine the changes required to bring these systems into compliance with the new standards.

In this talk, we will examine the solution to these issues and how it provides for both physical and cyber security of the substation communications equipment and data circuits while paying for itself through a reduction in telecommunication costs.

SECTION MEETING Distribution Automation Featuring: Ed West

Monday, November 13th, 6:30 pm
Mayo Medical Sciences Building
(321 3rd Avenue SW, Rochester)

► Pizza at 6:30; Meeting at 7:00 ◀

Ed West has worked in the energy industry for 28 years, the past 17 at Dairyland Power Cooperative, as a Programmer Analyst, a Load Management Supervisor and currently as the Director of Telecommunications and Control Systems where he is currently responsible for distribution automation. His prior industry experience includes work at the California Energy Commission and at Pacific Gas & Electric. He graduated From California State University at Chico with a BA in Industrial Technology in 1978.

This project will bring Distribution Automation to 450 substations for Dairyland's 25 distribution cooperatives.

IEEE Elections

The annual section election for Chair, Vice-Chair, Secretary and Treasurer will be held at this meeting. Also, there are several volunteer positions open. If you have any questions about any of these positions, you may contact any current board member. This is a great way to network and get involved.

IEEE Senior Member

Paul E. Dahlen has been elevated to a Senior member of the IEEE. He is a Senior Engineer in IBM's Technology Collaboration Solutions division. He has worked in the areas of signal and power integrity analysis of electronic packaging since joining IBM in 1993. Currently, his focus is on providing signal integrity engineering design and consultation services to external IBM customers. He holds BSEE and BSEP degrees from the University of North Dakota, and an MSEE degree from the University of Minnesota. Paul is also very active within the IBM invention program, with 13 U.S. Patents issued, and another 20+ filed/pending. He is a registered Professional Engineer (P.E.), in Electrical Engineering, in the state of Minnesota.

Siouxland Section Meeting

The IEEE Siouxland Section would like to extend an invitation to you and your section members to a November 14th meeting we are holding on Broadband over Power Line. We are bringing in a speaker from the American Radio Relay League, Newington CT, who is an expert on the topic and we expect this meeting to be one of the more interesting and informative we have had for some time. Reservations are required. For complete information, see our web site: <http://www.siouxland.org>.

Math... What Good Is It?

This seems to be the question that many elementary school kids are asking. A teaching system that cannot answer them is often blamed for losing future engineers and scientists who, at this youthful stage, may be mathematically adept but uninterested in pursuing math studies because they cannot imagine any useful way to apply what they might learn. For the full article, see:

<http://www.todaysengineer.org/2006/Oct/backscatter.asp>

New Engineering Web Site Has Answers

Want to know what engineering is all about, and where your son or daughter can study it? These questions and more are answered at the new TryEngineering Web site (<http://www.tryengineering.org>). The site is meant to inform students, teachers, school counselors, and parents about engineering and what engineers do. Read more at:

<http://tinyurl.com/yxzqle>



**The Institute of Electrical
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Southern Minnesota Section

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Hubble Space Telescope

WASHINGTON (31 October 2006) -- IEEE-USA commends NASA for announcing today that it would send a Space Shuttle mission to extend the life of the Hubble Space Telescope.

“The Hubble is one of the most productive astronomical observatories ever built,” said Dr. Russell Lefevre, IEEE-USA’s vice president for technology policy. “The scientific achievements have fostered an understanding of outer space that would not have been possible without it. The proposed upgrades will provide even greater knowledge of the origin and structure of the universe.”

A 2004 IEEE-USA position on the Hubble (<http://www.ieeeusa.org/policy/positions/hubble.asp>) called on NASA to explore “all possible avenues to prolong the useful life of the telescope for the benefit of science and humanity.”

The final maintenance voyage to the Hubble is tentatively scheduled for sometime in 2008. Five separate space walks will be required to extend and improve the orbiting observatory’s capabilities and keep it functioning through 2013. See NASA’s news release at:

<http://tinyurl.com/y42k2j>

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