



Madison Section NEWSLETTER

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Serving IEEE Members of South Central Wisconsin

February 2002

The State of the Electric Transmission System in Wisconsin

Date/Time: Thursday, February 21, 2002, 11:45 AM - 1:00 PM
Speaker: Kenneth D. Copp, P.E., American Transmission Company
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
Menu: Pizza buffet, salad and soft drinks (cost \$10.00, free for student members)
RSVP: by February 18th to Tom Yager via email (tyager@biocentralsolutions.com) or call 608.821.0821 ext. 342



Non-member guests are always welcome!

When American Transmission Company started business on Jan. 1, 2001, it broke new ground as the first for-profit, transmission-only company formed in the United States from multiple non-affiliated utilities since the onset of open transmission access. The formation of this transmission-only company came about as the result of a series of federal and state laws over the past decade allowing greater competition in the energy industry. Historically, utility companies have provided for the generation, transmission and distribution of electricity to customers within regulated, vertically integrated utilities. The legislative and regulatory changes are resulting in the creation of new companies responsible solely for generation, transmission or distribution functions, among them ATC.

Now it is 2002. The utility landscape continues to change. This presentation will be a brief update on where we have been and what has been accomplished to ensure the electric transmission system continues to be reliable and accessible.

Ken Copp joined American Transmission Company in August 2000 as Director of Engineering, Maintenance and Construction. As such, He is responsible for all aspects of protection and control design, overall facilities design and facilities maintenance. All of Ken's responsibilities require maintaining a close working relationship with ACTs contributing utility companies. His area also provides project management of all infrastructure additions as well as interconnection facilities for customers of the transmission company.

Ken brings 28 years of experience at Wisconsin Electric to ATC, most recently as Manager of Electric System Operations.

He is registered professional engineer in the state of Wisconsin and a member of IEEE Power Engineering Society. He holds a bachelor's degree in Electrical Engineering and an MBA, both from the University of Wisconsin – Milwaukee.

Coming in March... Nuclear Microbatteries for MEMS Use

Date/Time: Thursday, March 21, 2002, 11:45 AM - 1:00 PM
Speaker: Amit Lal, Assistant Professor, Electrical and Computer Engineering, UW-Madison
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
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CONTENTS

Meeting Notices	1
Free Lunch!	2
Personal Positioning for Engineers	2



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Free Lunch!

Yes, there is such a thing as a free lunch. The officers of the IEEE Madison Section have decided to implement a new lunch pricing policy in order to attract more members of the UW-Madison Student Branch of the IEEE to our monthly meetings. Until further notice, any student who is a member of the UW-Madison Student Branch of the IEEE can dine for FREE at our monthly meetings. We don't have all the details ironed out yet but just show up at our meetings (RSVP as usual if possible), enjoy the presentation, and eat lunch for free. You may want to bring your student ID just in case we decide to card you at the door (boy does that bring back some memories ;-).

Personal Positioning for Engineers: The Choices Are Yours

by Paul Kostek

After a period of extraordinary growth, the engineering profession has hit some turbulence, with demand for engineers slowing. Opportunities still exist; they just may not be exact matches to what we seek. As engineers in today's marketplace, we need to take responsibility for our careers and adjust to changes in the employment environment. We need to practice "personal positioning" - exploring the options available and then determining which best suit our individual needs.

We all pursue different goals in our careers and define success in different ways. Traditionally, most engineers have opted for direct employment with a company, government agency or academic institution. But today, employment options have expanded; opportunities exist in:

- Direct Employment
- Contract Employment
- Consulting
- Self-Employment

Within these broad areas, engineers can consider management or technical paths in large, medium-sized or small companies, and they can even choose between start-ups and established organizations.

EMPLOYMENT OPTIONS: WHICH IS RIGHT FOR YOU?

Most *direct employees* - those working for a company, agency or organization - can expect to receive regular paychecks; some career guidance; medical, vacation and retirement benefits; and training support. While all of these perks are nice - even necessary - training support is a benefit every direct employee should take advantage of. If you are a direct employee, pursue an advanced degree or complete a certificate program; attend seminars and conferences; or simply take courses that will help you build your skills set. Your employer will reap the benefits of employees who gain and use new knowledge. What's more, increasing your personal intellectual property will be one of the most important things you'll do for yourself; your knowledge, after all, is the one thing you'll take with you when you leave an employer.

Some engineers choose to work as *contract employees* (or temps). These professionals often receive assignments through a contract firm, which pays them an hourly rate, keeping a percentage of the total fee charged to the company for their overhead. Some contract firms provide 401(k) plans, paid vacation and access to medical plans. In most cases, however, if you are a contract employee you are responsible for providing your own benefits, and you must seek and participate in training and continuing education activities on your own.

The fundamental difference between *consultants* and *contractors* is that consultants are responsible for finding their own assignments and covering such expenses as taxes. Consultants can be members of a large or small firm, or can be independent practitioners. Either way, they must often pursue licensing and registration. Registration is legally required for all consultants who call themselves engineers and sell their services to the public or to companies. Corporations are covered by an industrial exemption; as long as at least one employee has a PE license, the other engineers on staff are exempt from licensing. Both consultants and contractors are responsible for their own benefits and training.

Self-employment is generally defined as owning one's own business and providing either a product or service. During the dot.com revolution of the 1990s, funding for new businesses - or, more likely ideas - was easy to obtain. Venture capitalists were more than willing to fund interesting ideas that might or might not pan out. In today's market, venture capitalists are looking much more closely at ideas, and then are going beyond the ideas themselves. They want to know how large the market is how much company founders have invested. If you're interested in pursuing self-employment, and will need to develop relationships with venture capitalists to do so, consider whether you have the financial resources to support yourself as well as provide benefits for yourself and your family.

CAREER OPTIONS FOR DIRECT EMPLOYEES

If, after considering your options, you think direct employment is right for you, you will have several additional options to consider. Do you follow a technical or a management path? Do you seek out a large, mid-sized or small company? Is an established organization preferable to a start-up?

MANAGEMENT VERSUS TECHNICAL TRACKS

One positive change in today's marketplace is that it has become far more flexible; it is now much easier to move back and forth between management and technical roles. Because the marketplace has become so competitive, companies cannot afford to have people in the wrong positions. And even with restructuring and the penchant for outsourcing seen in companies today, management opportunities do still exist. You just have to be open about your objectives and you have to be willing to make a change - perhaps to a new company - to achieve your management goals.

You will need to make choices on a technical track, too. For example, will you be a generalist or a specialist? This decision will be key to the career and skills development decisions you will make throughout your career. When pursuing the technical route, be sure to monitor industry trends to determine whether change along the way is necessary.

COMPANY SIZE: DO NUMBERS EQUAL CAREER STRENGTH?

In addition to deciding which path to follow, you must also consider the size of the organization you want to join. Large compa-

Spring 2002 Telecommunications Short Courses

- **Using the GSM Digital Wireless Air Interface**
February 19-22, 2002 in Madison, WI
- **Planning and Implementing Point-to-Point Microwave Radio Systems**, February 27-March 1, 2002 in Orlando, FL
- **Using and Installing Fiber Optic Systems for Communications**, March 5-7, 2002 in Madison, WI
- **Fundamentals of Data Communications**
March 19-21, 2002 in Madison, WI
- **Fundamentals of Cellular and PCS Wireless Communications**, April 9-11, 2002 in Madison, WI
- **DC Power System Design for Telecommunications**
April 23-25, 2002 in Madison, WI

For further information...

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College of Engineering Department of Engineering Professional Development

nies can provide a wealth of options in terms of exposure to technologies, projects and management positions. They tend to be bureaucratic, however, and you may not be exposed to the work of different groups within the organization. In a small company, you may have limited technologies at your disposal and fewer project and management choices, but you will have the opportunity to work with many different groups in a more intimate environment.

IS THE CORNERSTONE DATE IMPORTANT?

Beyond sheer size, company age is also a consideration. Should you join an established organization or a start-up?

The dramatic growth of start-ups in the 1990s and the availability of venture capital provided a window for quick wealth that was not previously available to most technical professionals. Start-ups were a career choice few engineers would have considered previously. The bust of 2000 brought many professionals back to reality, but opportunities do still exist with start-ups. How much risk can you live with? Will you be able to sleep at night not knowing if your company will be in business tomorrow? Can you survive on a reduced salary and do without benefits while you experience the excitement of being able to contribute to a new venture?

ARE YOU POSITIONED?

The keys to positioning yourself for success are understanding where you are in your career and where you want to go; determining the level of risk you can live with; and accepting the fact that in today's marketplace, change is the only given. From there, the options are yours for the choosing.

Paul Kostek is a principal at Air Direct Solutions. He has served as IEEE-USA President and as Region 6 PACE Coordinator.

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For more information, contact John Hicks at (608) 233-4875 or jhicks@facstaff.wisc.edu.

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