

SCANFAX

September 1998

Volume 50, Issue 7



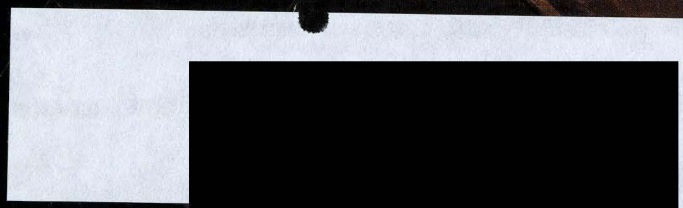
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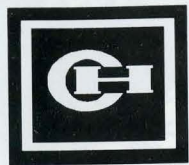
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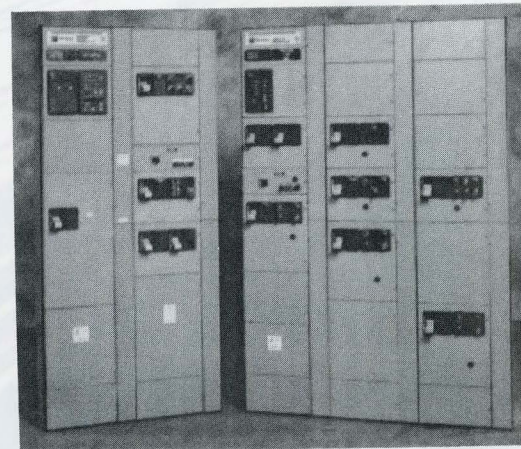
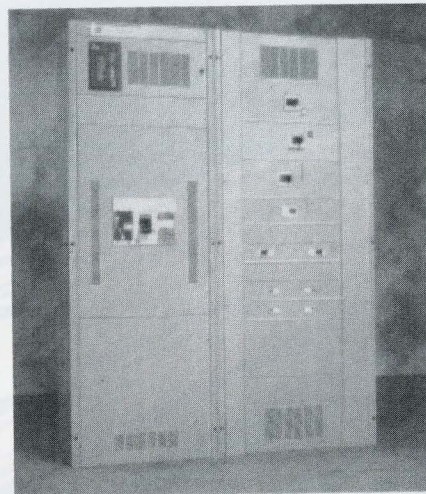
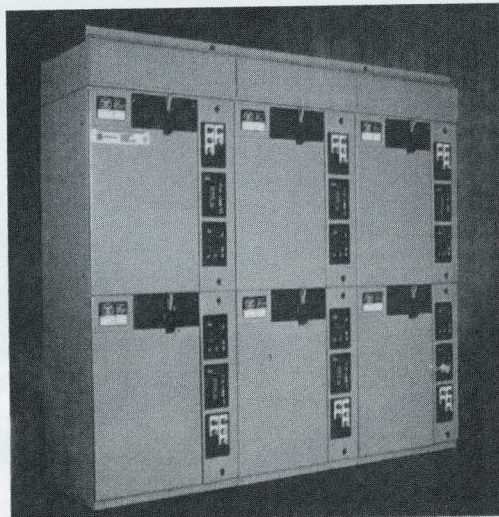


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Printed By

Town & Country Printers
Columbus, WI

SCANFAX (ISSN #0018-1297) is a monthly publication (except July and August) of the Chicago Section Institute of Electrical and Electronics Engineers, 8196 Cass Ave., Darien, IL 60561, (800) 898-4333 or (630) 493-4333. It is published by Slack Attack Advertising, 6400 Gisholt Dr., Suite 203, Madison, WI 53713, (608) 222-7630. Printing is by Town & Country Printers, Columbus, WI 53925. For advertising information, contact Slack Attack Advertising.

Subscriptions included in IEEE membership dues; non-member subscriptions: \$25 per year.

Address corrections should be sent to the IEEE office, 8196 Cass Ave., Darien, IL 60561.

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Features

- Light the billboard, not the sky!
Addressing the concerns of "light pollution" to achieve results more favorable to the outdoor lighting industry.
- Douglas Criner appointed to State Engineering Board
This is a 5-year appointment to the Illinois Board of Professional Engineers which oversees the licensing of professional engineers.

Departments

- Chairman's Message
- Calendar of Events

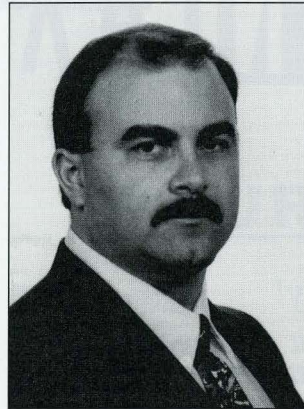
UPCOMING EVENTS

- Fox Valley Subsection and The Computer Society
WIRELESS MULTIMEDIA NETWORKING / September 23, 1998
- IAS/IES
UNINTERRUPTIBLE POWER SUPPLIES / September 23, 1998
- Professional and Business Directory
- Employment Opportunities

On the cover: Lighting billboards with new technology that reduces "skyglow."
Photo courtesy of MetroLux Lighting, a division of Quality Lighting, a JJI Lighting Group Company.
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Chairman's Message



Howard W. Penrose
IEEE Chicago Section,
Chairman

Sam Peach, the upcoming chair, had to move out of state for business reasons. As a result, the officers have all moved up one position leaving me the honor of serving you as chair for the upcoming year. It is my intention to promote IEEE Chicago Section activities and volunteers over the next year as well as the professions represented by IEEE.

We are always looking to increase the membership of IEEE, especially in the Chicago Section. I would like to challenge all members to recruit at least one other engineer into IEEE this year. Please contact our Member Services Chair, Patrick Hennelly (phone: 847-398-4510), or the IEEE business office (phone: 800-898-4333) for more information.

Chapters, Sub-Sections, and the Section are always looking for volunteers to assist in the operation of the Section. IEEE Chicago Section volunteers receive the benefit of working closely with their peers and networking with others in the engineering profession. Please contact your Chapter, Sub-Section, or Section officers for more information on how to become more involved. I strongly recommend that you attend at least one Chicago Section Executive Committee meeting to see how your section works and how you can assist.

January, 1998, marked our first issue of the new SCANFAX magazine. Since that time a number of companies have advertised their services within the magazine. These companies are providing the advertising dollars necessary to keep our Chicago Section newsletter in print. If your company wishes to be exposed to the engineering professionals of Chicagoland, or if you know of such companies, please contact Slack Attack Advertising for advertising information (608-222-7630).

We have been putting together an editorial calendar for 1998-1999 and are open to topic suggestions. We welcome you to share your ideas as well as your existing articles and papers. Feel free to submit these for consideration.

If you have news to share with the organization, we will consider including it in SCANFAX. Please submit press releases and news briefs to our editor, Gerry Ryan or to Slack Attack Advertising. This information will be included as space allows.

Thank you for the opportunity to serve as chairman of IEEE Chicago Section. I look forward to meeting and talking with you at upcoming meetings and functions throughout the year.

Light your sign... not the sky!

by EDWARD J. KRAMER

Benjamin Franklin said "the wise man will be guided by the stars." This statement was appropriate enough in Franklin's day, when most Americans could easily see the stars on a clear night.

On the other hand, at the turn of the 21st century, many of us might ask how we can be guided by stars we can't see. An estimated 90 percent of Americans, especially those in urban areas, actually cannot get the clear view of the man heavens.

"Skyglow," created by stray man-made light, has washed out the Milky Way, planets, comets, and constellations. This by-product of artificial lighting is of major significance to the outdoor advertising industry.

To understand why, let's go back about a quarter of a century. At that time billboards were poorly lit in a variety of ways. The need for their lighting forced incandescent and halogen lamps to give way to fluorescent, which in turn surrendered to efficient and appropriate metal halide. This evolution was driven by the need for an economical light source to provide strong, bright light that would effectively lengthen the advertising day to 24 hours.

Interstate freeways were expanding. There were more motorists on the highway. America's evening activities were multiplying. The hour of the well-lit billboard had definitely arrived.

In 1998, our roadside billboards are certainly well lit. Too well, according to some lighting environmentalists. In fact, billboards, along with other lighted outdoor signs, are regarded as a major source of so-called "light pollution." Concerns with the current quality of billboard lighting go

beyond a light-blasted environment, as we shall see. And, it well may be time for us to take a careful look at outdoor lighting specifications.

A growing number of communities have already enacted or are in the process of considering legislation on "light trespass" and "light pollution." Some of these regulations may be contrary to the commercial needs of the community. It's high time for us as individuals and as an industry to address these concerns. If we do so, we may be able to achieve results more favorable to the outdoor lighting industry.

"Skyglow" caused by lighted billboards is easily identified and often singled out as a target by environmentalists. One organization, the International Dark-Sky Association, is actively promoting the use of "cutoff" fixtures and tight control of all light that is directed above the horizontal plane.

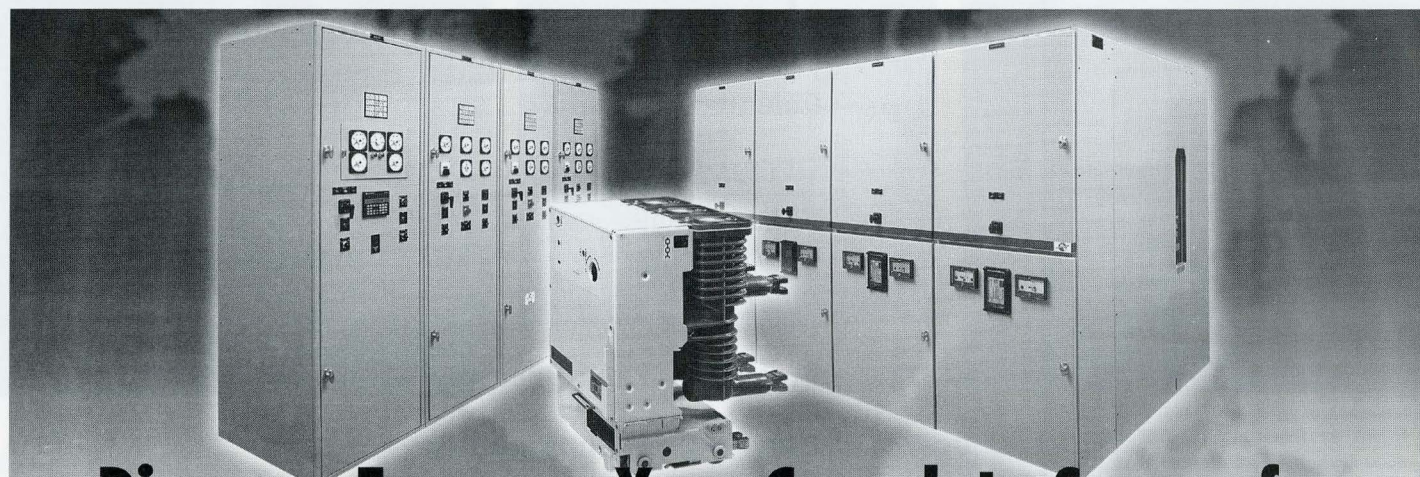
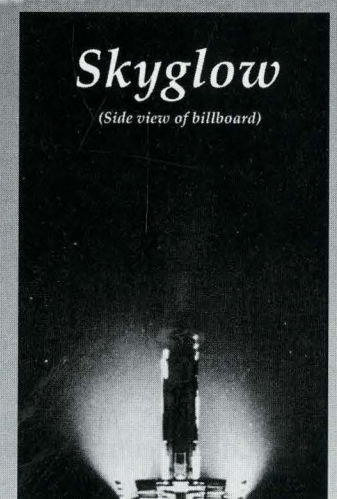
It's interesting to note that there may be a relationship between skyglow and sign visibility. Maybe we can reduce light pollution and at the same time do a better job getting our messages to the public via billboards.

Glare and contrast

Can we make our billboard copy and graphics more visible? More readable? Let's look at "glare" and "contrast" and how these factors are related to skyglow.

Skyglow

Skyglow is caused by poor aiming and directional control of the light projected from the fixture housing. It occurs when there is an artificial increase in the ambient light surrounding a billboard. Not only does this ambient light contribute to light



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pollution, it reduces contrast among the copy and graphic elements of a sign's message. Poorly aimed light washes out the message, creates glare and makes the sign difficult to read, while causing wasted, ineffective spillover of the light itself.

The Illuminating Engineering Society of North America (IESNA) addresses this problem in their publication No. CP-46, A Statement on Astronomical Light Pollution and Trespass.

The typical billboard luminaire

used today employs a heavy, large prismatic glass refractor lens to distribute the light. Regarded as superior technology 15 years ago, it is designed to throw light over a very large area so that the board itself is easily illuminated. Much of the light bypasses the billboard and is thrown into the sky to be wasted. It also creates a halo of light around the billboard which reduces contrast and hence visibility. In addition, the glare surrounding the refractor itself is often visible for miles.

Present technology has provided us with the means to deal effectively with skyglow and related light pollution. First of all, we can now effectively measure light and understand its effects. With a greater insight into light waste, we can design optical systems that meet and exceed increasingly stringent design parameters of light control, glare, brightness, energy efficiency and maintenance.

The evolution of the auto headlamp provides a good example of how light management has improved in recent years. The headlamp of 15 years ago was a large, clunky chunk of glass that, when broken, created a sharp, jagged road hazard. This unwieldy system provided an acceptable degree of light control at the time. Yet, growing safety, environmental and economic concerns demanded a more efficient headlamp that provided improved driver vision and glare control for oncoming motorists.

Today, we have auto headlamps that utilize sophisticated reflector systems and clear front lenses. They require less energy (lower wattages), provide greater visibility on the highway and reduce glare from oncoming traffic.

Reflector technology may also offer a solution to some of the challenges that have arisen for billboard lighting. Those who write specifications for billboard lighting systems should take a careful look at the amount of light a system generates and the contrast it produces between the sign and its background. Clarity of the message is vital to speed of recognition which is such a critical factor in outdoor advertising.

Let's review some of the considerations important in specifying billboard lighting. The aging of America's population is one major factor. Our eyes at 50 years of age need 10 times the amount of light required by a 10-year-old's eye. To get our message through to the affluent older consumer, we're going to need well-lighted billboards.

Contrast is the key

Contrast is the key to the visual

acuity of billboards. Generally speaking, the greater the relative contrast between the elements of the billboard's message, the easier it is to read.

This relative contrast can be reduced in several ways. First, when the fixture is brighter than the face of the sign, and second, when the ambient light is high. Both these situations frequently arise when refracting systems are used in billboard lighting.

It's interesting to note that the very skyglow that reduces the nighttime readability of billboards is a major factor in light pollution. The IESNA states that if we are aware of the needs and wishes of the public and are thoughtful about each installation, it is possible to reduce light trespass without serious handicap to our nighttime outdoor activity.

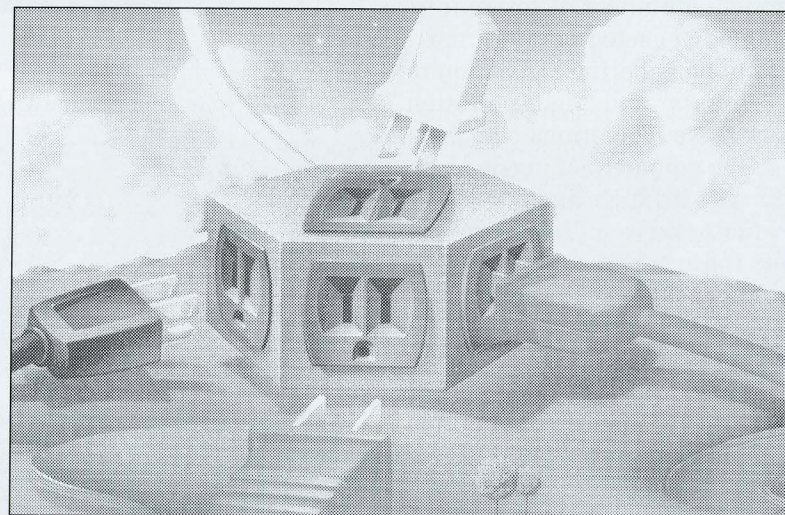
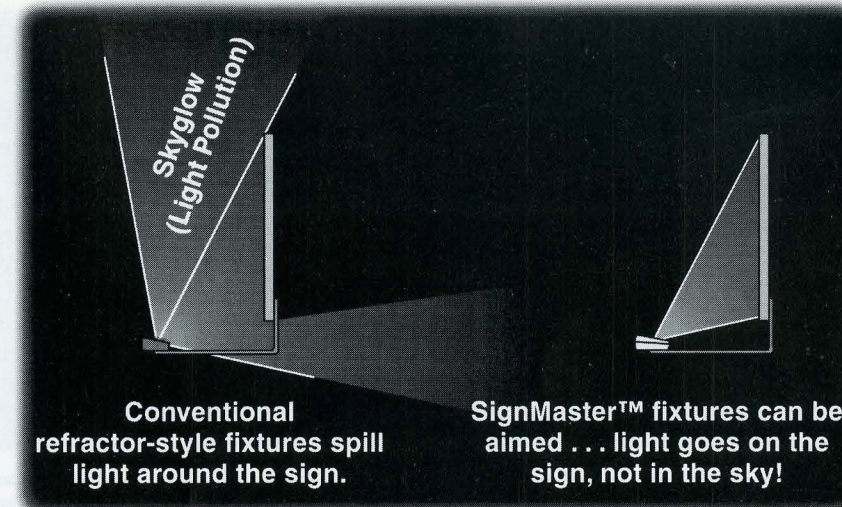
We can take advantage of recent developments in lighting technology by specifying luminaires that distribute light through the use of high-lytooled, computer-designed,

adjustable reflectors and flat, tempered glass lenses.

From a practical standpoint, the reflector needs to be adjustable in order to accommodate the widely varying field mounting conditions and sign dimensions prevalent in the U. S. today. The availability of reflector-based billboard lighting systems means that no longer do we have to accept the "one size fits all" philosophy of protecting a blast of

light at a billboard in hopes that it will adequately cover the message.

With the lighting systems available today, we can both increase the readability / recognition of the message and become more responsive to the needs of the community. We now have access to luminaires that will help us redefine the specifications of our billboards and begin the process of bringing them up to the standards of the 21st century. ■



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For additional information, contact Professor Joel Goldhar, 312-906-6526.

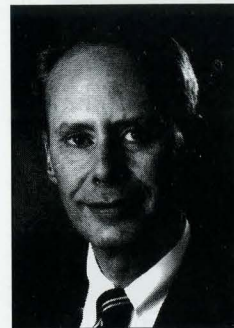
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Criner appointed to State Engineering Board



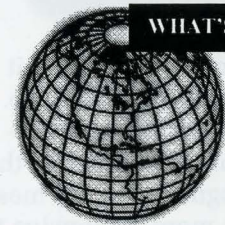
Douglas Criner

Douglas Criner, Westmont, has been appointed to serve on the Illinois Board of Professional Engineers, which oversees the licensing of professional engineers. The 5-year appointment was announced July 10, by Nikki M. Zollar, director of the Illinois Department of Professional Regulation.

The board reviews the education and experience of applicants to determine eligibility to be licensed as a professional engineer. The board also conducts disciplinary hearings in the event of complaints against an engineer.

Criner, a registered professional engineer, received a B.S. degree in electrical engineering at the University of Illinois at Urbana-Champaign. He is a vice-president and regional manager for Burns & McConnell Engineering Col with offices in Westmont, Chicago, and O'Fallon.

Criner is active in the Illinois Society of Professional Engineers, the Institute for Electrical and Electronic Engineers, the Consulting Engineers Council of Illinois, and serves on the University of Illinois electrical and computer engineering alumni board.



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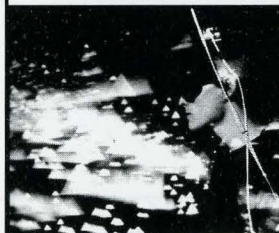
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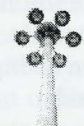
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1998 IEEE Chicago Section Awards Banquet recapped

Surprise awards were announced during the 1998 Annual Awards Banquet of the Chicago Section. The Section Chairman's Award for 1998 went to John Waters.

The Student Chapter at DeVry's Chicago Campus presented awards to Professor Tom Varentoni, its Chapter Advisor and to Joe Feitler, its Chapter Mentor.

Our Chicago Section wishes to acknowledge the financial support from the following sponsors: Alpha Metals, Inc., Andrew Corporation, Bycap, Inc., Charles Industries, Inc., Contemporary Control Systems, Corcom, Inc., Dr. Richard Dyott, Elite Electronic Engineering Company, Methode Electronics, Motorola, Inc., Newark Electronics, Northrop Grumman Corporation, Patten Industries, Inc., Panatrol Corporation, Rockwell Automation, Sargent & Lundy, S & C Electric, Siemens Energy and Automation, Tellabs, Inc., University of Illinois at Chicago, Weldy/Lamont Associates, Inc. and Zenith Controls.

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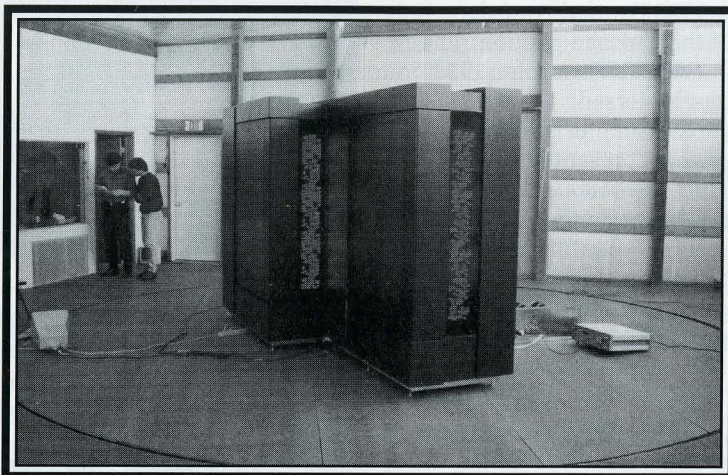
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Calendar of Events

DATE	EVENT
Sept. 8, 1998	IEEE Chicago Section EXECUTIVE COMMITTEE MEETING
Sept. 23, 1998	Fox Valley Subsection and The Computer Society WIRELESS MULTIMEDIA NETWORKING
Sept. 23, 1998	IAS/IES UNINTERRUPTIBLE POWER SUPPLIES: TECHNOLOGIES AND APPLICATION

FOX VALLEY SUBSECTION AND THE COMPUTER SOCIETY

Wireless Multimedia Networking

Wednesday
Sept. 23, 1998

SEASON KICK-OFF MEETING

Amitabh Mishra, Lucent Technologies

Location:

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Time: Refreshments/Networking
Social: 7:00pm.
Presentation: 7:30pm.

For more information:

Contact Arup Bhuyan at (630) 713-7759.



IAS/IES

Uninterruptible Power Supplies: Technologies and Application

Wednesday,
Sept. 23, 1998

IAS/IES DINNER MEETING

Kyle Johnson, Midwest Regional Sales Manager, Cyberex, Inc.

About the topic:

The technologies that are used in modern uninterruptible power supplies (UPS) will be described and compared. Selection of the most cost-effective UPS will be demonstrated for several common applications, and attendees will be given the opportunity to have their own UPS questions and issues discussed.

Location:

Como Inn, 564 N. Milwaukee Ave, Chicago, IL
Directions: The Como Inn is located on Milwaukee Avenue just off the expressway on the east side of 90/94.

Time: Social: 5:30pm.
Dinner: 6:00pm.
Presentation: 7:00pm.

About the speaker:

Mr. Johnson has been presenting information on static switch and UPS technologies to a variety of technical audiences for Cyberex. Previously, with Siemens-Furnas Controls, he was a sales engineer for solid state starters and variable frequency drives. He graduated from Iowa State with a BSME and is an IEEE - IAS member.

For reservations:

Cost: \$20 includes the presentation and your choice of a chicken or pasta four course dinner. Please call the IEEE Business Office at (800) 898-IEEE or (630) 493-4333 with your entree preference.

NOTE: Attendance at IEEE Technical Meetings is acceptable as one PDH (Professional Development Hour) per meeting, where continuing education is required for renewal of the P.E. licenses.

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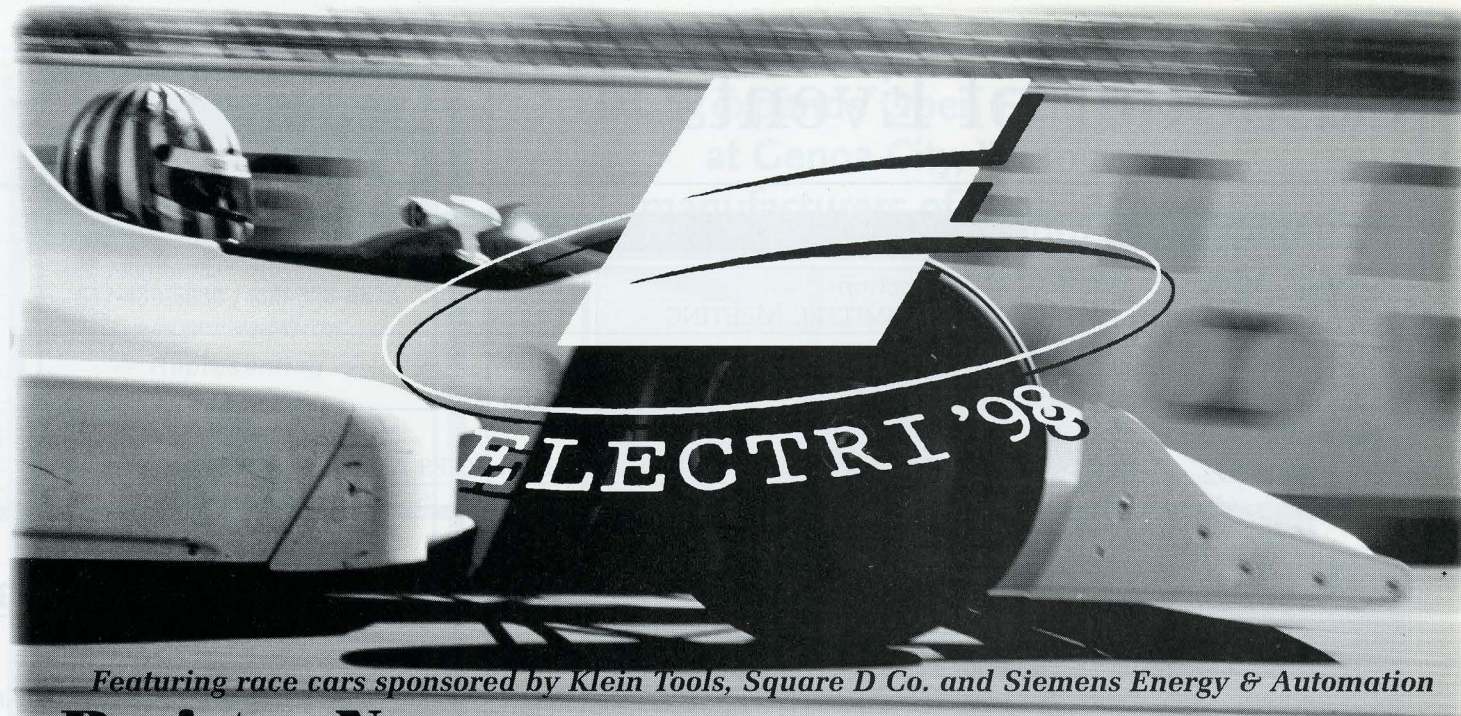
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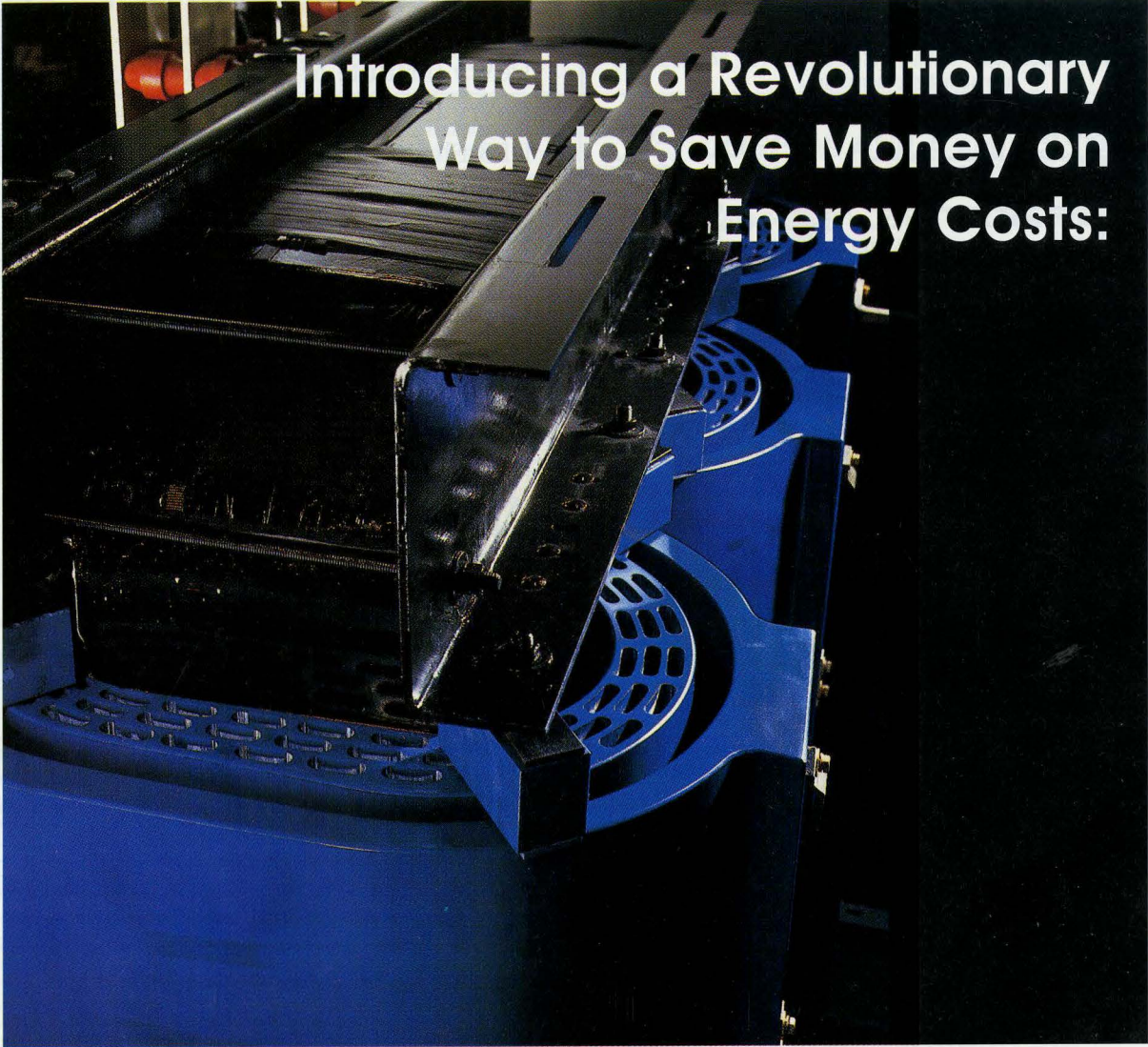
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