

Scanfax

POSTMASTER:
SECOND CLASS POSTAGE
paid at Chicago, Illinois.

SCANFAX, INC. 55 E. WASHINGTON ST., ROOM 532, CHICAGO, ILL. 60602

CHICAGO SECTION · IEEE · INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS FEBRUARY 1974

How Proposed 1974 NEC Changes Affect Industry

Ralph H. Lee, E. I. du Pont de Nemours & Co., will address the joint meeting of the Chicago Section and the Chicago Chapter of IAS/IECI. on February 13, 1974. Meeting will be held at Nielsen's Village, 7330 W. North Avenue, Elmwood Park. Social hour, 5:30 p.m.; dinner, 6:15 p.m.; meeting, 7:15 p.m. Cost of dinner is \$7.00 to IEEE members; \$8.00 to non-members. All who come for dinner will receive complimentary liquid refreshments. This is an important meeting, so come with your friends and associates. For reservations, call the IEEE office, 263-5954, or 782-5520.

Before OSHA, the adherence of industry electrical practice to that required

by the National Electrical Code was basically that of a point of departure. Where the engineering approach showed a more satisfactory solution than the NEC requirement, the engineering judgment won out. Now that OSHA has made the NEC mandatory, the IEEE Industrial Applications Society is making a concerted effort to make the code compatible with the engineered approach to design and operation of industrial plants. This includes activity in Ground Fault Protection Cable Ampacities, Tray Cable, Trays, Motor Wiring, and Hazardous Locations, to name a few. Ralph H. Lee will discuss "The Proposed 1974 NEC Changes as They Affect Industry."

Ralph H. Lee is the principal design

consultant at E. I. du Pont de Nemours & Company. His du Pont experience includes the design and startup of nuclear reactor control systems; military explosive and commercial chemical and textile manufacturing installations; the development of improved performance of motor insulation, wire and cable, motor control, solid state inverter motor drives, industrial distribution system co-ordination switchgear, and grounding systems.

Lee received his BS in electrical engineering from the University of Alberta, Canada, in 1934. From then through 1937, he was with a gas utility in Chicago and in Tennessee. From 1937 to 1942, he was with National Geophysical Co., a firm that specializes in seismic oil exploration. In 1942, he joined du Pont, where he is now the principal electrical consultant to the engineering and manufacturing departments.

CALENDAR OF EVENTS

- | | |
|---------|--|
| Feb. 6 | "E—Energy, Engineering, and Ecology; Power Engineering Society/Fox Valley Subsection; Toll Gate Inn, Aurora (Page 2) |
| Feb. 7 | "Use and Misuse of Reliability Data Bases"; G-Reliability; Nielsen's Restaurant, 6475 N. Mannheim Road, Rosemont (Page 2) |
| Feb. 13 | "How Proposed 1974 NEC Changes Affect Industry"; Chicago Section/IAS-IECI; Nielsen's Village, 7330 W. North Avenue, Elmwood Park, Ill. |
| Feb. 19 | "Microwave Digital Communications Systems"; Menard's Black Steer Restaurant, 6446 W. North Ave., Chicago, Ill. (Page 3) |
| Feb. 19 | Washington Award Dinner; Pick Congress Hotel (Page 2) |
| Feb. 20 | "Electronic Bugging and Surveillance"; G-Vehicular Technology; Chicago Engineers Club, 314 S. Federal Street, Chicago, Ill. (Page 3) |
| Mar. 6 | "LMFBR — Status and Future"; Power Engineering Society/Fox Valley Section; Midwest Country Club, Oak Brook, Ill. |
| Mar. 13 | "Process Pumping Heat Tracing"; IAS-IECI; Nielsen's Village, 7330 W. North Ave., Elmwood Park, Ill. |
| Mar. 19 | "Microwave Transmission of Power"; Chicago Section IEEE; Nielsen's Village, 7330 W. North Ave., Elmwood Park |
| Mar. 23 | Tour of Stickney Plant, Metropolitan Sanitary District; Fox Valley Subsection |
| Mar. 26 | "Supervisory Equipment"; Power Engineering Society; Chicago Engineering Society, 314 S. Federal St., Chicago, Ill. |
| Apr. 27 | IEEE Recognition Dinner; Arlington Park Towers |

Deadline for copy: First week of month preceding publication.

IEEE OFFICE: 263-5954

Help Wanted!

The Chicago Electrical Commission is considering a review of the 1970 Chicago Electrical Code. John Trutwin, vice president of Environmental Engineering Consultants, has suggested that the Chicago Section of the IEEE, act as spokesman for the Chicago engineering community and propose necessary modifications to the code.

"It is the primary responsibility of a design professional, such as professional engineers, to design safe electrical facilities," Trutwin told the Chicago Section Executive Committee at a meeting on January 8. "I propose that the Chicago Section should provide information to the local code making authorities."

With the concurrence of the Executive Committee, Trutwin and Howard L. Wolfman, Teletype Corp. will be heading an IEEE Chicago Electrical Code Revision Committee.

All interested members should submit their suggestions before March 31, 1974. These suggestions should include:

1. Reference to the specific paragraph in the code.
2. Proposed revised wording of the specific paragraph in the code.
3. Reasons for the suggested change in the code.

These proposals will be evaluated by the Committee headed by Trutwin and Wolfman. All members of the committee will be IEEE members who are already familiar with the Chicago Electrical Code. After evaluation, the recommendations will be submitted to the Chicago Electrical Commission. The Commission will be notified of IEEE's interest before submission of the actual recommendations.

Send any suggestions either to John J. Trutwin, P.E., Environmental Engineering Consultants, 309 W. Jackson Boulevard, Chicago, Ill. 60606, or to Howard L. Wolfman, Teletype Corp., 5555 Touhy Avenue, Skokie, Ill. 60076. Trutwin's phone number is (312) 427-2700; Wolfman's, (312) 982-2240.

Guarrera New IEEE President

John J. Guarrera has been elected President of the IEEE; he succeeds Dr. Harold Chestnut. Dr. John D. Ryder was elected as vice president. Dr. Ryder is Professor Emeritus, Michigan State University and currently resides in Dunnellon, Florida.

E-Energy, Engineering, and Ecology

On Wednesday, February 6, 1974, Richard A. Young, editor, *Pollution Engineering*, will talk to a joint meeting of the Fox Valley Subsection and the IEEE Power Engineering Society. Young will discuss the engineer's impact on the environment in areas such as pollution control, energy utilization, and natural resources conservation.

The meeting will be held at the Toll Gate Inn, 149 South Lincolnway, Aurora, Ill. (Exit from East-West Tollway at Route 31, go north 1/2 block.) Social hour, 6:00 p.m.; dinner, 7:00 p.m.; meeting, 8:00 p.m. For reservations, call the IEEE office, 263-5954. If you cannot make the dinner, you are welcome to attend the meeting only.

Richard A. Young is also a recipient of the Charles Ellet award as the most outstanding engineer of the year as awarded by the Western Society of Engineers. He was selected to be the official representative and pollution control expert in the U. S. Government at a meeting with the Communist-block countries in Bulgaria.

Young is environmental advisor to ten states as technical consultant in the Midwest Legislative Council on Pollution Control; the Illinois House of Representatives' Environmental Study Committee; and the Governor's Council on the Environment, Commonwealth of Virginia. In addition, he advises the Illinois Attorney General's Office and the Northeastern Illinois Planning Commission on matters of environmental control. Young is also an Illinois municipal pollution control officer.

Young is listed in *Who's Who in Ecology* and the *Directory of Environmental Consultants*.

Reliability Group

The next meeting of the Reliability Group will be on February 7, 1974 at Nielsen's Restaurant, 6475 N. Mannheim Road, Rosemont. Dinner at 6:00 p.m.; meeting at 7:00 p.m. Even if you cannot make the dinner, you are welcome to attend the meeting.

Lee Mirth, Rome Air Development Center, Rome, N.Y., will speak on "The Use and Misuse of Reliability Data Bases." For reservations, call the IEEE office, 263-5954.

Scanfax Board of Directors
George J. Mack, President
Illinois Bell Telephone Company
Ruth L. Oldfield, Secretary
and Executive Editor
R. L. Oldfield & Associates
Ed. Osterberg, Treasurer
Illinois Bell Telephone Company
Don Haines
Advertising Manager
(312) 832-4611
Scanfax Office
Room 532
55 E. Washington Street
Chicago, Ill. 60602
(312) 263-5954

Chicago Section Officers
Richard A. Bulley, Chairman
Commonwealth Edison Company
James F. Ralston, Vice Chairman
Allen-Bradley Company
Joseph Feitler, Secretary
Programming Methods, Inc.
Daniel J. Vieth, Treasurer
Argonne National Laboratory

SCANFAX, February 1974 - Volume 26, Number 6. SCANFAX is published monthly, except July and August by SCANFAX, INC., Chicago, Illinois, for the information of the members of the Chicago Section, Institute of Electrical and Electronics Engineers. SCANFAX, INC., is a not-for-profit organization with editorial office at 1200 E. Madison Park, Chicago, Ill. 60615, and business office at 55 E. Washington Street, Chicago, Illinois 60602; telephone number (312) 263-5954. Subscription rate for IEEE members collected in dues, \$1.50; for others, \$3.00 per year. Second-class postage paid at Chicago, Illinois.

Meeting Reservations

Remember that the IEEE office, (312) 263-5954, will take your meeting reservations. The best time to call is between 9:30 a.m. and 12:30 p.m. or between 2:30 p.m. and 5:00 p.m.

The meeting coordinator for any group should call and leave his number with Judy at the office, so she can refer questions on matters other than reservations.

Change of Address

If you have moved — or are about to move — please notify the IEEE office in NEW YORK. Our SCANFAX mailing labels come from there, and we cannot update your mailing address locally in Chicago.

A change of address form is included in each issue of SPECTRUM. Your local post office will also supply you with cards; mail to Emily Sirjane, Membership Services, IEEE, 345 E. 47th Street, New York, NY 10017. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

Microwave Digital Communications Systems

C. Louis Cuccia, Philco Ford Corporation, will speak at the February 19, 1974 meeting jointly sponsored by the Chicago Chapters of the IEEE Antennas and Propagation Society, Communications Society, and Microwave Theory and Techniques Society. His topic is "An Overview of the Technology and Systems of Microwave Digital Communications." Meeting will be held at Menard's Black Steer Restaurant, 6446 W. North Avenue, Chicago, Ill. Social hour, 6:00 p.m.; dinner, 6:30 p.m.; meeting, 7:30 p.m. For reservations, call the IEEE office: 263-5954.

Modern energy use requirements are also being reflected in the use of the microwave and millimeter-wave spectrum to accommodate the data communications needs predicted for the 1980's. These needs predictions are based on the present explosive growth in the number of voice and video channels, and the number and wide variety of computer-to-computer transmissions.

Cuccia will talk on spectrum utilization for data and voice transmission, addressing the problem from three standpoints. First, the nature of the data involved, including how this data is generated and the optimum modulation technique of quadriphase and 8-phase modulation techniques in transmission. Second, the total system, including both terrestrial and satellite communications links and the use of multiple-access systems, such as frequency-multiplexed QPSK carriers, TDMA, spread spectrum techniques, and single carrier per channel SPADE techniques, depending on the type of user. Third, the new microwave techniques of PSK modulators, video and rf amplifiers, carrier reconstruction systems, and communication type bandpass filters and matched filters. His description of new microwave techniques will center upon the ability to generate and transmit data as fast as 300 picoseconds and data ratios up to a gigabit per second.

C. Louis Cuccia is a principal engineer at the Western Development Laboratories of Philco Ford Corporation, now specializing in the quadriphase systems used in satellite communications, and in the development of many of the new techniques required. He was educated at the University of Michigan and Princeton University. He was in charge of TWT and solid state system development at RCA Corp. until the mid-60's. Since 1966, he

has been at Philco Ford, involved in all phases of satellite and earth terminal design.

Cuccia is an associate editor of the *Microwave Journal*, and has written many books and papers on the subject. He is the author of *Harmonics, Sidebands, and Transients in Communication Engineering*, published by McGraw-Hill.

John deButts to Receive Engineers' Washington Award

John Dulany deButts, chairman of the Board of the American Telephone & Telegraph Company and former President of the Illinois Bell Telephone Company, has been named to receive the 1974 "Washington Award", one of the nation's outstanding engineering honors.

deButts has an outstanding career in electronics and communication and has received many honors from educational, civic, youth and government organizations for his many contributions to society. He is a graduate electrical engineer from Virginia Military Institute and has spent his entire business career in the Bell system.

The Award will be presented at a dinner, Tuesday, February 19, in the Pick-Congress Hotel, Chicago, sponsored by the Western Society of Engineers and IEEE. Tickets may be obtained from Western Society of Engineers, 314 S. Federal Street, Chicago, 663-0220. Tables of ten may be reserved.

deButts will be the 51st recipient of the Washington Award which has been bestowed on such notables as Herbert Hoover, Henry Ford and Orville Wright, John A. Volpe, Ambassador to Italy and former U.S. Secretary of Transportation, received the award in 1973.

The Washington Award is conferred annually during National Engineers Week by fellow engineers for accomplishments which pre-eminently promote the happiness, comfort and well-being of humanity.

Recipients of the award are selected by ballot of a commission representing six national and regional engineering societies, including IEEE, and admin-

A Word for the Sponsors

For years, Chicago IEEE dinners and guests have enjoyed the annual IEEE Recognition Dinners. But how many of us know that it is the industry sponsors that make this event possible? Ticket prices do not cover even half the cost of the Recognition Dinner.

Industry sponsors, as a gesture of support for the Chicago engineering community, make up the deficit. This year, Chicago Section IEEE wants to officially recognize all those firms who have contributed so generously in the past, and to thank them for their generous support.

Without the industry sponsors, the Recognition Dinner would not be possible. Chicago IEEE acknowledges this, and encourages all members to acknowledge this by individually thanking the sponsors whenever possible. If you work for a firm which has been an industry sponsor in the past, personally thanked the sales manager and the advertising manager. If you purchase electronic or electrical goods and services, you can, of course, make your thanks even more concrete. Given the choice of two suppliers, choose the industry sponsor — and let him know that you are supporting him because he, in turn, has supported the activities of the Chicago electrical and electronics engineering community.

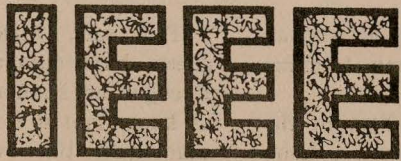
Bugging Your Enemies

Tony Pellicano of Fortune Enterprises Private Investigation Ltd. will speak on "Electronic Bugging and Surveillance" at the February 20 meeting of the Group on Vehicular Technology, at the Chicago Engineer's Club, 314 S. Federal Street, Chicago. Social hour, 6:00 p.m.; 7:00 p.m.; meeting, 8:00 p.m. Cost of dinner, \$5.75.

Make your reservations now for this timely meeting. For reservations, call Jack Dahlberg, 355-8000, or the IEEE office, 263-5954. Be sure to make reservations by Friday, February 15.

istered by the Western Society of Engineers.

The Award is named for the nation's first president, George Washington, an engineer and statesman. It was established in 1916 by the late John W. Alvord, one of the founders of Alvord, Burdick & Howson and former W.S.E. president.



RECOGNITION DINNER

SATURDAY APRIL 27's the Date...

... for the 1974 IEEE Recognition Dinner at the Arlington Park Towers. Past dinners have been a roaring success — don't miss this one. Send for your tickets now. Meet your fellow IEEE members and their spouses for a great night out.

Tickets are still only \$12.50 per person, thanks to our industry sponsors. For that you get:

HORS D'OEUVRES

DINNER

DANCING

FLOOR SHOW FEATURING

DINK FREEMAN (MC)

The KRAMERS

WES HARRISON

DAHLENA

DICK CARLTON'S ORCHESTRA

THE NANCY CAROLE TRIO

MAKE YOUR RESERVATIONS NOW! SEND A CHECK (MADE PAYABLE TO CHICAGO SECTION IEEE) OR USE AMERICAN EXPRESS, MASTER CHARGE, DINERS CLUB OR BANK AMERICARD NUMBER FOR \$12.50 PER PERSON TO:

**J. REYNOLDS
Room 5118
MOTOROLA, INC.
9401 W. GRAND AVENUE
FRANKLIN PARK, ILLINOIS 60131**

FROM:

NAME _____

ADDRESS _____

CITY _____ **STATE** _____ **ZIP** _____

CARD NUMBER _____ **NUMBER OF TICKETS** _____