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CHICAGO SECTION • IEEE • INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS

APRIL 1977

CALENDAR OF EVENTS

*For reservations call the IEEE office at 236-4609
(Unless otherwise indicated)*

- April 5 "The Design of Small Slot Arrays," MTT/APS, Black Steer Restaurant, 6446 W. North Ave., Chicago, Ill. Social Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 6 "Solar Energy," Fox V. Sub. (j w/Western Sub. Div., WSE), Andy's Steak House, 17W611 - 22nd, Oak Brook, Ill. Dinner 7:00 PM; Meeting 8:00 PM.
- 7, 14, 21, 28 Microprocessor Systems Design Course offered by the Computer Society, Chicago Section IEEE & Northwestern U; held at Northwestern University, Evanston.
- 12 IEEE Executive Committee Meeting; Brown & Root Offices, 2001 Spring Rd., Oak Brook, Ill., 7:30 - ALL WELCOME.
- 13 "Utility & User Interface," IAS/IECI, Nielsen's 7330 W. North Ave., Elmwood Park, Ill. Social Hour 5:30 PM; Dinner 6:15 PM; Meeting 7:15 PM.
- 13 VT Grp. No information by deadline.
- 14 "Status Report on Square Butte HVDC Transmission Line," PES (j w/Western Sub. Div., WSE), Branding Iron Restaurant, 3131 Finley, Downers Grove, Ill. Social Hour 6:15 PM; Dinner 7:15 PM; Talk follows dinner.
- 26 "Use of Aerospace Technology in Consumer Products," Relia. Grp., Maitre D' Restaurant, 111 Higgins Rd., Elk Grove Village, Ill. Social Hour 6:00 PM; Dinner 6:45 PM; Meeting 7:30 PM.
- May 5 "ERPI - where it came from; where it's been; where it's going," PES, Midland Hotel, 172 W. Adams St., Chicago, Ill. Social Hour 11:00 AM; Luncheon 11:45 AM; Talk follows luncheon.
- 7 IEEE Recognition Dinner. O'Hare - Ramada Inn, Mannheim & Higgins Rds., Rosemont, Ill. Cocktails 6:00 PM.
- 10 IEEE Executive Committee Meeting; Brown & Root Offices, 2001 Spring Rd., Oak Brook, Ill., 7:30 PM - ALL WELCOME.
- 11 "Annunciator & Data Recording Systems," IAS/IECI, Nielsen's, 7330 W. North Ave., Elmwood Park, Ill. Social Hour 5:30 PM; Dinner 6:15 PM; Meeting 7:15 PM.
- 14 Ladies Night Theater-Dinner Party, MTT/APS. Drury Lane East, McCormick Pl., Cocktail Hour 6:30 PM; Dinner 7:30 PM; Meeting 8:30 PM; Show 9:30 PM.
- 21 Tour of Commonwealth Edison Company's LaSalle County Nuclear Generating Sta., LaSalle, Ill., PES. Morning and afternoon tours. IEEE members only.

*PLEASE: Mark your two month Scanfax calendar for a desired meeting.
We cannot accelerate Postal Service or sending of meeting information.
Deadline for copy: One month before date of issue.*

MTT/APS Ladies Night

On Saturday, May 14, 1977 the MTT/AP Society will sponsor a Ladies Night Theater-Dinner Party at Drury Lane East, McCormick Place. The show will be the "Odd Couple" starring Sherman Hemsley, star of the TV show "The Jeffersons." Cocktail hour will be 6:30 - dinner 7:30 - meeting 8:30 - show 9:30 PM. The meeting will include election of

new officers.

Price is \$11.50 per person. For reservations please mail remittance to: Daniel Schmidt, c/o Andrew Corporation, 10500 West 153rd Street, Orland Park, Illinois 60462 prior to April 30.

Students will be reimbursed for their dinner charges through the IEEE.

Days of Cheap Energy are over

What are the procedures the Commonwealth Edison Company must consider when a large building like the John Hancock or Sears Tower asks to plug into their A.C. supply on an economical basis? The problems require even more careful consideration due to today's critical energy situation. The Architects and Con-

sulting Engineers must work more closely than ever before with the Utility company to accomplish the common goal of the best, most economical, and energy efficient building.

The IAS-IECI Chicago Chapter will be the sponsor of a presentation on this subject of user-utility interface on Wednesday, April 13, 1977. The speaker, Frederick H. Norton, who is in the marketing department of the Commonwealth Edison Co. has Edison experience ranging from planning engineer to Assistant Supervisor of Specialists in the Marketing Dept. He has assisted on the marketing teams with the all-electric approach on every major high rise building constructed in the Chicago Central Division. He has worked with the Architects and Consulting Engineers on Sears, John Hancock, IBM Building, and assisted in the pioneering development of the 12KV high voltage distribution system in the all-electric Marina Towers, and 1 E. Schiller Bldg.

The meeting will be held at Neilson's Village, 7330 W. North Ave., Elmwood Park, Illinois.

Cocktail Hour: 5:30 PM.

Dinner Time: 6:15 PM \$8.00 per person (Those who come for dinner receive complimentary liquid refreshments.)

Meeting: 7:15 PM.

Reservations: Call (312) 236-4609. If you need or can provide transportation to or from the meeting, please advise at time reservations are made.

Electric Cars

An Electric Vehicle Exposition and Conference will be held April 26-29 at McCormick Place, sponsored by the Electric Vehicle Council. IEEE members interested in electric transportation may wish to attend. Exhibit and Conference hours are 9 am to 6 pm daily except Tuesday.

On display at the Exhibit will be electric transportation products by more than 40 companies from the U.S. and 7 foreign countries. Included will be personal cars, service vehicles, material handling equipment, batteries, chargers and electric vehicle components.

The Conference will discuss technology, application, and marketing of road vehicles, material handling equipment, and public transportation equipment.

Although the EV Expo is not open to the general public, complimentary Exhibit pre-registration forms from Commonwealth Edison are available to IEEE members. Call the IEEE office, 236-4609, with your request. You may also register at the door for a \$5.00 fee. There is an additional charge to attend Conference sessions.

Touring Nuclear Plant ?

This is a friendly reminder for the Power Engineering Society sponsored tour of Commonwealth Edison Company's new LaSalle County Nuclear Generating Station in LaSalle, Illinois. The two tours scheduled will take place on Saturday, May 21, 1977 — one in the morning and the other in the afternoon. The tours are limited to IEEE members only.

For tour reservations, call 236-4609. State your preference as to the morning or afternoon tour. An effort will be made to fulfill your preference providing that you make your reservation early.

MIDCON comes to Chicago We Need You

Remember the first MIDCON—Mid-Continent Electronics Show and Convention will be held at O'Hare International Convention Center, November 8-10, 1977. It will be organized and styled very much in the manner of Wescon in California and Electro in New York and Boston, both highly successful conventions, as you know. As Wescon "rotates" each year between San Francisco and Los Angeles, and as Electro rotates between New York and Boston, so MIDCON will rotate between Chicago and Dallas (and possibly Atlanta, at some later date).

Now for the request: Even with a strong and versatile professional staff, there is an urgent need for interested and productive volunteers. Both the West Coast and East Coast events operate each year with as many as 200 volunteers on 14 working committees. The Chicago Section of the IEEE manpower contribution to MIDCON should be in the area of at least 50 volunteers in order to "carry our fair share" of the workload and, of course, receive our share of the surplus. The monies derived from the show will be used to further the activities of the Section and Chicago Chapters of Groups and Societies.

We need your help in staffing the committees listed below. Please review the list and consider which committee you can serve on. COMMITTEE: Facilities; Film Theater; VIP-International; LifeMember/Ladies; Program; Visitor Services; All Industry Reception; Attendance; Exhibit Services; Marketing Conferences; Registration.

For any committee position of your choice please contact: HOWARD L. WOLFMAN, Convention Director, 3248 Echo Lane, Northbrook, Illinois 60062 (Home Phone: 564-1771 — Business Phone: 982-2240).

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Meeting Reservations

Remember that the IEEE office, (312) 236-4609 will take your meeting reservations. Call anytime between 8:00 AM and 5:00 PM, Monday through Friday.

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

Change of Address

If you have moved — or are about to move — please notify the IEEE Service Center in New Jersey. 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 Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, N.J. 08854. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

Reliability Techniques —

for Consumer Products

The IEEE Reliability Group Chicago will hold a meeting at 7:30 PM on Tuesday, April 26, 1977. The speaker will be Mr. Jack Reynolds, Director of Product Assistance, Admiral Group, Rockwell International, who will discuss "Use of Aerospace Technology in Consumer Products".

Mr. Reynolds will review the benefits to be gained from applying such aerospace reliability techniques as Prediction and Apportionment and Design Review to consumer products. He will also talk about the costs of these programs and the reliability improvement which can be expected from each. This will help you decide which techniques you can afford to use in your consumer reliability program; and which techniques you cannot afford to neglect.

Both IEEE members and interested non-members are welcome at this meeting. We look forward to seeing many of you on April 26.

The meeting will be at the Maitre D' Restaurant, 111 Higgins Road, Elk Grove Village on April 26, 1977. Cash bar will be at 6:00 PM; Dinner at 6:45 PM, \$8.50; meeting at 7:30 PM. Call (312) 236-4609, IEEE office for reservations by April 17, 1977.

Item of Interest

Our Chairman receives Award for hiring Veterans.



Illinois State Employment Service's Al Engler (second from right), veteran employment representative and a past commander of the American Legion, and Jack Cullinan, office manager, presented the citation for employment of veterans to Paul Jahn (left), Waukegan Station superintendent; Jack Bitel, Zion Station superintendent; and Jack Barrett, Industrial Relations-Waukegan.

EPRI -

"WHERE IT'S BEEN,
WHERE IT'S AT,
WHERE IT'S GOING!"

The purpose of the Electric Power Research Institute (EPRI) is to promote and coordinate R&D in the electric utility industry. Since its inception in 1973, EPRI has grown to a full fledged organization. Its staff consists of 267 engineers representing 58 utilities. Currently it is managing 900 R&D projects and has completed 150 projects. 500 utilities support EPRI's program, 400 utility personnel serve as advisors and 28 utilities are acting as hosts for demonstration of new technology. The projects sponsored by EPRI encompass almost all aspects of utility power generation, transmission and operation. The R&D budget for the next five years is \$1.087 billion.

What EPRI is, what it has accomplished so far and its plans for the future will be the subject of Ed Steeve's talk at the Power Engineering Society's meeting at the Midland Hotel on Thursday, May 5. Mr. Steeve is Director of Research for the Commonwealth Edison Company. His previous experience has been mainly in the transmission and distribution field with particular emphasis on underground cable. He has 5 IEEE transaction papers on fault locating, line design and sodium conductor cable. He is a member of IEEE (Power Group), Western Society of Engineers, Sigma XI and is a registered professional engineer. The Midland Hotel is located at 172 West Adams Street in downtown Chicago. The social period starts at 11:00 AM (cash bar) — luncheon at 11:45 AM — followed by Ed Steeve's talk. Luncheon cost is \$6.50.

DESIGN -

Slot Antennas

The microwave (MTT) - antenna (AP) society will have Dr. Robert S. Elliott, antenna research professor and consultant as guest speaker at their meeting on Tuesday, April 5th. Dr. Elliott's talk will cover the design of small slot arrays. Comparison between various experiments and a new theory is presented. A theory has been developed whereby the length and offset of every slot in the array can be determined, in the presence of mutual coupling, for a specified aperture distribution and impedance match. A general relation between slot voltage and mode voltage is developed and then formulas are derived for the active, self, and mutual admittances among slots. These formulas result in a design procedure. Analogous treatment of inclined series slots is possible.

Tests of the theory include the resonant length of a zero offset slot, resonant conductance versus offset and resonant conductance versus frequency for a single slot, and self and mutual admittances for two staggered slots. The design and performance of a two by four longitudinal shunt slot array is also described. The research project was sponsored by Rantec Corporation.

Dr. Elliott has been Professor of Electrical Sciences at UCLA since 1958. His prior experience includes periods at the Applied Physics Laboratory of John Hopkins and at the Hughes Research Laboratories, where he headed the antenna research activities. Dr. Elliot has also been on the faculty of the University of Illinois and was a founder of Rantec Corporation, serving as its first vice president and technical director. He currently serves as a consultant to Hughes, Canoga Park and Rantec Corporation.

The meeting will be at the Black Steer Restaurant, 6446 West North Avenue, Chicago, Illinois. Social hour is 6:00 PM — Dinner at 7:00 PM — and the meeting at 8:00 PM. Please make your reservations early with the IEEE office (236-4609).

Where is our Banner ?

Somewhere, someplace the Chicago Section IEEE banner must be stashed away.

If you have any idea where it might be, please contact the IEEE office. If you have it, throw some brown wrapper paper around it and send it to the office. We'll even take it C.O.D.!



Committee members are: (standing L to R) Jim Ralston, John T. Williams, Howard F. Prosser, John Bowler, Tom Meyer & Frank Voltaggio, Jr.; (seated L to R) John E. Murray, Joe Puca, Bob Warzin & Hankie Korman, Chairman.

IEEE 1977 Recognition Dinner

The Recognition Dinner will be held on Saturday, May 7 at the O'Hare — Ramada Inn located on Mannheim and Higgins Roads, Rosemont, Illinois in their lush Penthouse Ballroom. This year's dinner party will include two free cocktails starting at 6:00 PM. with dinner, entertainment and dancing for your enjoyment. In addition, Fellow Awards will be given to: Mr. Carl G. Eilers, Mr. Edward F. Koncel, Jr. Last year's entertainment was such a roaring success that we intend to pattern this year's entertainment much the same by having: Bob Anthony — M.C./Comedian; "Moriah" — Singing Group; Dick Carlton — Dance Band.

We are planning to have a packed house as tickets will be limited. To insure a perfect evening of a night out on the town with your favorite gal, make your reservations now! Tickets may be purchased in advance by mail from John Bowler, Zenith Radio Corporation, 1000

Milwaukee Road, Glenview, Illinois. For reservations call John at 391-7000 or 391-7503. Price of the tickets are \$15.00 each or \$30.00 per couple. Make checks payable to the IEEE Chicago Section.

Plan Now! Plan Now! Attend the top social event of the year and recognize the leading engineers in Chicago.

Mail reservation to:

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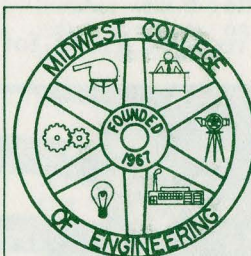
Name _____
Address _____
City _____
State _____ Zip _____
No. of tickets _____

High Voltage DC Update

For a comprehensive coverage of the growing high voltage DC power transmission field be sure to attend the Power Engineering Society's meeting on Thursday, April 14th. The speakers will be James F. Trump and Dr. Frederick J. Ellert of the General Electric Company in Philadelphia, Pa. Mr. Trump is Marketing Manager of HVDC Venture operation. He has twenty years of managerial experience at G.E. — his most recent responsibilities in Switchgear Products — until the HVDC section was formed. Dr. Ellert is Manager of HVDC Control and Advanced Engineering operation. He has held responsible engineering positions at G.E. since 1952 and directed the development of HVDC control systems in the Technical Resources Operation just prior to joining the new HVDC operation. He is active in IEEE, ANSI, IEC and in the US-USSR working group on UHV transmission. In addition to his active participation he has over 20 papers on power control and HVDC transmission to his credit.

The meeting, held jointly with Western Society of Engineers (West Suburban), will be at the Branding Iron restaurant in Downers Grove and will have the following presentation on HVDC transmission: Mr. Trump will cover (1) Background and Technology, (2) Applications, (3) Incentives, (4) G.E. Projects; Mr. Ellert will cover (1) Solid State Valve Design, (2) Solid State Control, (3) Research and Development.

Social hour at the Branding Iron will be 6:15 PM. — Dinner at 7:15 PM. (\$8.00 per person) — followed by the meeting.



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Chicago Section Election of Officers

The Chicago Section Nominating Committee has selected the following slate for the Officers and Executive Committee for the 1977-1978 season. Please mark your choices on the ballot below. If you wish to vote for another member, write in the name in the space provided and check the box.

OFFICERS

Chairman: ☐ Robert A. Waghorne
Teletype Corp.
☐ _____
(write-in)
Vice Chairman: ☐ John E. Waters
Bussman Mfg. Div.
☐ _____
(write-in)
Treasurer: ☐ Charles Hatstat
Sargent & Lundy
☐ _____
(write-in)
Secretary: ☐ Paul Geiger
Allen-Bradley Co.
☐ _____
(write-in)

EXECUTIVE COMMITTEE

☐ George W. Austin
Commonwealth Edison Co.
☐ Mike Barnes
Motorola Inc.
☐ Chuck Borchert
Bell Telephone Labs
☐ Walter Ciciora
Zenith Radio Corp.
☐ Dennis Lamont
Weldy-Lamont Assoc.
☐ Edward Osterberg
Illinois Bell Telephone Co.
☐ Howard L. Wolfman
Teletype Corp.
☐ _____
(write-in)
☐ _____
(write-in)

Send the ballot to Daniel Veith, IEEE Office, 125 S. Clark St., Chicago, Ill. 60603. Ballots must be received no later than April 15. Results will be announced in the May issue.

FINAL ANNOUNCEMENT MICROPROCESSOR SYSTEMS DESIGN

Offered By
Chicago Chapter of IEEE Computer Society,
Chicago Section of IEEE and Northwestern University
To Be Held At Northwestern University, Evanston, Illinois
4 Days — April 7, 14, 21, 28, 1977

This is intended to be a comprehensive course dealing with the design of systems incorporating a microcomputer. Application examples are taken from systems actually designed and built and will be discussed in detail. To allow individual interaction registration will be limited. This course is a repeat of the very successful course offered in both 1975 and 1976.

Session 1	Morning	Fundamentals of Microcomputer Systems
	Afternoon	Microprocessor Software
Session 2	Morning	Architecture of Typical Microprocessors
	Afternoon	Microprocessor Interface Techniques
Session 3	Morning	Design Considerations
	Afternoon	Application Examples
Session 4	Morning	Design Support Facilities
	Afternoon	Future Directions of Microprocessors
Fee — \$250 — includes course lectures, materials, texts, and luncheons		

SPEAKERS

1. Dr. F. M. Brasch, Associate Professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in computer control and digital design.
2. Dr. W. J. Lennon, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in real-time computer systems and Director of Computer Sciences Research Laboratory.
3. Dr. M. J. Gonzalez, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in computer organization and distributed systems.

For further information contact: IEEE Office, 236-4609

(Call immediately for possible opening in course group)

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Sound Reinforcement

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saturday may 7, 1977 norris center northwestern university evanston, illinois

PROGRAM McCORMICK AUDITORIUM

- | | |
|---|--|
| 8:15 Registration opens | 2:00 HIGH LEVEL SOUND REINFORCEMENT SYSTEMS FOR THE PERFORMING ARTIST. Stan Miller, Stanal Sound. |
| 9:00 Welcome to conference. Mahlon D. Burkhard, President MAC '77. | 2:30 CREATING THE CONFERT HALL OUTDOORS WITH TIME DELAY. Mahlon D. Burkhard, Industrial Research Products, Inc. |
| 9:15 SOUND REINFORCEMENT: AN AUDIO VISUAL OVERVIEW. Peter W. Tappan, R. Lawrence Kirkegaard and Associates. | 3:00 Coffee Break |
| 10:00 Coffee Break | 3:30 SOUND REINFORCEMENT FOR THE THEATRE. David L. Klepper, Klepper Marshall King Associates, Ltd. |
| 10:30 MICROPHONES. Robert B. Schulein, Shure Brothers Inc. | 4:00 EDUCATION IN SOUND SYSTEM DESIGN AND IMPLEMENTATION. Don Davis, Synergetic Audio Concepts. |
| 11:00 ELECTRONICS. Jurgen Wahl, U.R.E.I. | 4:30 PANEL DISCUSSION; WHAT ARE THE FUTURE ASPECTS OF SOUND SYSTEM DESIGN AND IMPLEMENTATION? Don Davis, moderator, with all other speakers participating. |
| 11:30 LOUDSPEAKERS AND LOUDSPEAKER SYSTEMS. Don Keele, Jr., Klipsch and Associates. | 5:00 End of conference. Closing comments. |
| 12:00 LUNCH. Demonstrations and exhibits will be open. | |

ADVANCE REGISTRATION — \$5.00

Mail with remittance before April 28, 1977

REGISTRATION AT CONFERENCE — \$6.00

STUDENT REGISTRATION AT CONFERENCE — \$2.00

Present valid student I.D. card

FOR RESERVATIONS:

Please detach form and mail check payable to:

MIDWEST ACOUSTICS CONFERENCE

c/o IEEE Room 1545

125 S. Clark St.

Chicago, Illinois 60603

MIDWEST ACOUSTICS CONFERENCE

Saturday, May 7, 1977

Check here [] for student registration.

For additional registrations please duplicate information on this page. Office copies are O.K.

Name _____

Company/School _____

Mailing Address _____

City _____ State _____ Zip _____

Interested in membership?

Circle group(s) below.

AES
ASA

IEEE
CAAG

Circle below if you are now a member of:

AES — Audio Engineering Society

ASA — Acoustical Society of America

IEEE — Institute of Electrical & Electronics Engineers

CAAG — Chicago Acoustical & Audio Group