

Fall General Meeting

October 7-12, 1962

CHICAGO, ILLINOIS

Headquarters
Pick-Congress Hotel



SCHEDULE OF LOCALLY SPONSORED EVENTS

Sunday—October 7

2:00 P.M. to 6:00 P.M.—Registration

4:00 P.M.—Welcoming Tea

Monday—October 8

9:30 A.M.—Ladies' Coffee Hour

1:00 P.M.—Ladies' Petite Luncheon

2:00 P.M.—General Session

Tuesday—October 9

9:00 A.M.—Underwriters
Laboratory Tour

9:00 A.M.—United Air Lines Tour

9:30 A.M.—Ladies' Coffee Hour

12:00 Noon—Ladies' Luncheon at
Playboy Club

1:00 P.M.—Commonwealth
Edison Tour

Wednesday—October 10

9:00 A.M.—McCormick Place Tour

9:30 A.M.—Ladies' Coffee Hour

10:00 A.M.—Oakbrook Shopping
Center Tour

12:00 Noon—Eta Kappa Nu
Luncheon

1:00 P.M.—Argonne Laboratory
Tour

1:00 P.M.—American Oil Tour

Evening—Fall Frolics

Thursday—October 11

9:00 A.M.—Filtration Plant Tour

9:00 A.M.—Western Electric Tour

9:30 A.M.—Ladies' Coffee Hour

1:00 P.M.—U. S. Steel Tour

2:30 P.M.—Ladies' Dessert Tea

Friday—October 12

9:30 A.M.—Ladies' Coffee Hour

No trips scheduled



Arrow indicates location of Pick-Congress Hotel on Michigan Boulevard in Chicago, Illinois

Fall is a delightful time to visit Chicago and to partake of the many activities and sights the city offers to convention goers. AIEE members and guests have an opportunity to combine a visit to the Windy City with attendance at not only the Fall General Meeting but also the **National Electronics Conference** which will run during the first three days of the meeting.

Reciprocal registration for the National Electronics Conference, which is a combined exposition of electronic equipment and a technical conference, has been arranged for AIEE members. Anyone registering for the Fall General Meeting will automatically be registered for the electronics conference, which will be held on October 8-10 at nearby McCormick Place on Lake Michigan.

The newly-modernized Pick-Congress Hotel, on Michigan Avenue overlooking Grant Park and Buckingham Fountain, will be the official hotel for the Fall General Meeting. It offers rooms for all members and guests plus facilities for all meeting activities.

INFORMAL TEA: The annual welcoming tea for AIEE members and ladies will be held on Sunday afternoon, October 7, in the Gold Room of the Pick-Congress. The tea will begin at 4:00 P.M.

REGISTRATION: The registration fee for members will be \$6.00 and for non-members, \$10.00. There will be a \$2.00 fee for each lady guest. No fee will be charged for student members. There will be no advance registration.

The registration and ticket sales desks will be open Sunday, October 7, at 2:00 P.M. and will remain open until 6:00 P.M. Desks will re-open at 8:00 A.M. on Monday, October 8, and each morning thereafter during the week. Tickets for ladies' activities will be available at the welcoming tea on Sunday, October 7, and for the event of the day or for following days at the coffee hour to be held each morning starting at 9:30 A.M. in Room 900 of the Pick-Congress Hotel.

HOTEL RESERVATIONS: Requests for reservations should be sent to the Pick-Congress Hotel, 520 S. Michigan Avenue, Chicago 5, Ill. Specifically refer to the AIEE meeting in your letter and include this information: Type of accommodations you require, number in your party, and time and date of arrival.

Accommodations will be assigned on a first-come first-serve basis. Do not send advance payment unless requested to do so when you receive your confirmation directly from the Pick-Congress. The hotel advises that these accommodations and prices are available: Singles, \$8.00 to \$17.00; doubles and twin-bed rooms, \$12.00 to \$21.00; and suites, \$22.00 to \$65.00.

AIEE members who may be accustomed to staying at other than the Pick-Congress Hotel should know that the Fall General Meeting will be one of five major conventions being held in Chicago the week of October 7-12. Therefore, all members are encouraged to stay at the Pick-Congress for greatest convenience during the meeting.

Continued on page 2

INFORMATION DESK: Information on what to see and where to go in Chicago and suburbs for after-hours diversions will be available at the combined hospitality and ticket sales booth in the registration area. This booth will be open each week day from 8:00 A.M. to 4:30 P.M. for the convenience of all AIEE members and guests.

Available there will be knowledge of what is going on in Chicago and how to get there. Visits can be planned to such attractions as the Natural History Museum (formerly Field's Museum), Shedd Aquarium, Adler Planetarium, Museum of Science and Industry, the Art Museum, and Brookfield and Lincoln Park Zoos. The booth also will advise on shopping at Marshall Field and other fine stores in the "Loop" area, as well as restaurants for dining and entertainment.

CLOTHING: Fall in Chicago can be cool and brisk, although warm "Indian Summer" days are not unknown. Comfortable walking shoes are recommended for those planning visits to the many extensive attractions in the city.

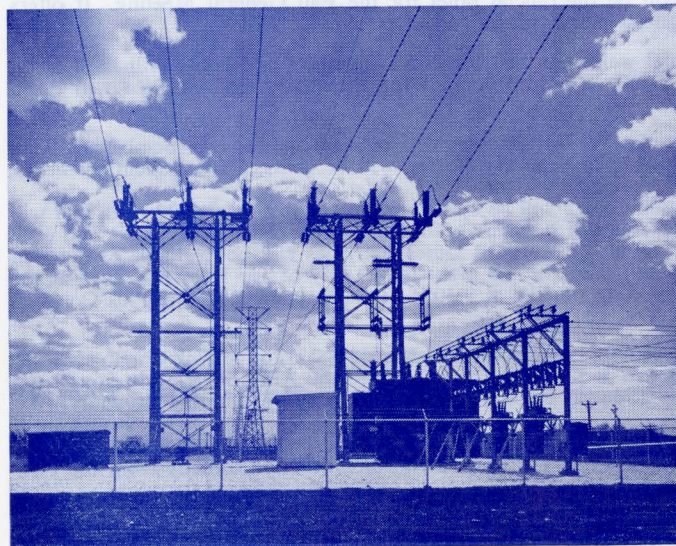
TRANSPORTATION: Chicago still remains the center of railroad transportation for those not wishing to fly to the city. Both jet and propeller-driven aircraft arrive from all parts of the country daily at Chicago's new O'Hare International Airport, about 40 minutes by limousine or taxi to the downtown area. The airline limousine stops at and will pick up passengers at the Pick-Congress for O'Hare Airport.

ETA KAPPA NU LUNCHEON: The annual luncheon sponsored by Eta Kappa Nu will be held on Wednesday, October 10, at noon in the Pick-Congress. A prominent speaker for the luncheon is being arranged and will be announced at the meeting. Price for the luncheon will be about \$2.50. Limit for the luncheon will be about 100. Luncheon is open to AIEE members.

"FALL FROLICS" DINNER AND ENTERTAINMENT: Highlight of the social functions of the Fall General Meeting will be the "Fall Frolics," an evening for dinner and entertainment, the latter offered by top-flight talent. This event will be held on Wednesday evening, October 10 in the Pick-Congress. The price will be \$12.50 per person. Dress informal.

INSPECTION TRIPS: All inspection trips will leave from and return to the Pick-Congress Hotel. The round-trip fee for each tour will be \$2.00. The morning tours will leave at 9:00 A.M. and the afternoon tours will leave at 1:00 P.M. Some trips will have a limited attendance as noted.

Tuesday, October 9, morning - Underwriters Laboratories, Inc. The tour to this facility will better acquaint AIEE members and guests with the scope and depth of testing carried on continually on all kinds of electrical equipment and apparatus. Tour members will



Commonwealth Edison 138-12KV R-O-W Transmission Substation

witness electrical testing of equipment and inspect electrical testing facilities.

Tuesday, October 9, morning - United Airlines, O'Hare Airport. With the complete transfer of all air traffic from Midway to O'Hare International Airport, United Air Lines has installed automated equipment to efficiently handle luggage for departing passengers. Tour members will get a behind-the-scenes look at the new conveying system, which is controlled electronically to route luggage to the proper departing flight. After the agent weighs the bag, it is then automatically sorted and dispatched or stored for a particular flight. Hangar facilities for the maintenance and repair of United Air Lines' fleet of jets and propeller-driven aircraft also will be visited. Limit for the tour - 40.

Tuesday, October 9, afternoon - Commonwealth Edison Substations. This tour will enable AIEE members to appraise the practices of Commonwealth Edison Company in the design, construction and operation of five types of substations. Included in the tour will be typical examples of metropolitan, urban and compact distribution center substations, plus a 138-kv to 12-kv substation located on transmission right-of-way, and a 34-kv transmission substation.

Wednesday, October 10, morning - McCormick Place. A complete tour will be made of one of the largest and most modern convention halls in the world. The tour will cover the extensive electrical facilities as well as the exhibit areas. A highlight of the tour will be a trip through the Arie Crown Theater, with a look backstage at the elaborate lighting and sound systems.

Wednesday, October 10, afternoon - ZGS Installation, Argonne National Laboratory. The Argonne National Laboratory has as its primary objective research and development of peaceful uses of atomic energy, with its work divided about equally between basic research and engineering development. One of the key facilities that will contribute to basic research is the \$50 million Zero Gradient Synchrotron, now under construction. Tour members will have an excellent opportunity to view more of this facility and its major components than they could after completion of the project. The ZGS is a 12.5-billion electron volt particle accelerator and is expected to produce a greater abundance of particles than other and larger accelerators. For work in basic research it will produce all of the 30 known sub-atomic particles. Depending upon the progress of construction, tour members may see the ring of magnets that weighs 4,000 tons and is 200 ft. in diameter, plus the shielding afforded by tons of surplus battleship armor plate. Limit for the tour - 40.

Wednesday, October 10, afternoon - Computer Installation, American Oil. American Oil Company, at its Whiting, Indiana Refinery is now using a special closed-loop IBM computer system to control the operation of a 140,000 bbl. crude pipe still. The on-line computer control system is an integrated operation for scanning process instruments, immediately computing current operating conditions and then adjusting the control points to achieve optimum operations. The operators of the crude pipe still use a console for making inquiries to the computer and for inserting information into the computer, such as product specifications or the latest laboratory results.

The trip will start with a short talk by the company's computer control coordinator. This will be followed by a trip into the refinery where the crude pipe still, the control room and the computer will be explained separately. Limit for the tour - 40.

Thursday, October 11, morning - New Filtration Plant. Chicago's Central District Filtration Plant is the world's largest water filtration plant and is the largest single construction job of its kind now under way in the United States. The plant is built in Lake Michigan within a 60-acre coffer dam. More than 125,000 timber pilings have been driven into the lake bottom to support the structures which will consist of 515,000 cubic yards of concrete and 40,000 tons of reinforcing steel.

The filtration plant will have a capacity of at least 960 million gallons of filtered water a day. Motor-driven pumps will lift raw lake water to a 25.5-foot head and the water will then flow by gravity through the filtration plant. The water flow will be controlled by 2,000 valves and 80 sluice gates. Across the middle of the plant is the operation center, or head house, which includes the pumping station, chemical, control and administration buildings and the chlorine and chemical receiving building. Settling basins

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ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 60¢ each (\$1.00 each to nonmembers) (minimum order \$1.00), by sending enclosed order form and remittance to the AIEE Order Department, 345 East 47th Street, New York 17, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured.

Coupon books in \$12 denominations are available to those who wish to avoid remittance, by check or otherwise.

Note: The TRANSACTIONS papers will be printed in the bimonthly publications as follows:

- I COMMUNICATION AND ELECTRONICS.
- II APPLICATIONS AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

Note: Unnumbered Conference Papers (CP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the Transactions and are not presently scheduled for reproduction in any form by the Institute.

Monday, October 8

9:00 a.m. - Radio Communication - I

- 62-1398. A 6GC Propagation Study to Evaluate System Engineering Considerations in Traversing Difficult Terrain. L. T. Hearson, American Tel. & Tel. Co.
- CP62-1419. A Mechanized Method for Evaluating Microwave Radio-Frequency Interference. G. T. Masters, D. G. Schutt, The Pacific Tel. & Tel. Co.
- CP.* Rapid Microwave Switching for a Hot-standby System. M. H. Kebby, P. Skullestad, A. R. Meier, Lenkurt Electric Co.

9:00 a.m. - Data Communication

- CP.* Dataphone Service as Applied to Telemetry, Alarm, and Control Systems. D. A. Kerr, American Tel. & Tel. Co., N. B. Zenack, Bell Telephone Labs., Inc.
- CP.* Alarm, Telemetry and Remote Control Services Using Multi-Frequency Techniques Over Switched Telephone Circuits. J. F. O'Neil, R. Sokoler, Bell Telephone Labs., Inc.
- CP.* Automatic Dialing for Switched Data Services. D. W. Darling, Bell Telephone Labs., Inc.
- CP.* An Automatic Dialing Unit for Switched Data Services. P. J. Germond, K. L. Mayer, Bell Telephone Labs., Inc.

9:00 a.m. - H. V. Transmission Lines

- 62-1362. Digital Computer Calculation of Transients in Electric III Networks. A. J. McElroy, R. M. Porter, American Electric Power Service Corp.
- 62-1181. Effect of Predischarge Currents Upon Line Performance. III C. F. Wagner, A. R. Hileman, Westinghouse Electric Corp.
- CP.* Equipment Requirements for the Bare Hand Live Line Method. C. J. Miller, Ohio Brass Co.

9:00 a.m. - Switching Circuit Theory and Logical Design Symposium

The papers in this symposium of five sessions will be available as special publication S-141 at or after the meeting.

Welcoming Address - W. L. Semon, Sperry Rand Research Center.

Opening Remarks - J. P. Runyon, Bell Telephone Labs.
Invited Address - J. P. Eckert, Remington Rand Univac.

2:00 p.m. - General Session

Welcome: J. H. Enenbach, Chairman, Chicago Section; H. A. Peterson, Vice President, Fifth District.

Address: President B. R. Teare, Jr.

Awards Presentation: W. R. Harris, Chairman, Recognition Awards Committee.

Medal in Electrical Engineering Education - Dr. Ernst A. Guillemin - Webster Professor of Electrical Engineering, Massachusetts Institute of Technology.

William M. Habirshaw Award - Herman Halperin - Retired, Commonwealth Edison Co., Consulting Engineer on Electric Power Systems.

Mervin J. Kelly Award - Dr. Claudé E. Shannon, Donner Professor of Science; Massachusetts Institute of Technology.

Morris E. Leeds Award - Bernard E. Lenehan, Consulting Engineer, Westinghouse Electric Corp.

David Sarnoff Award - Harry B. Smith, Manager, Engineering Dept., Air Arm Division, Westinghouse Electric Corp.

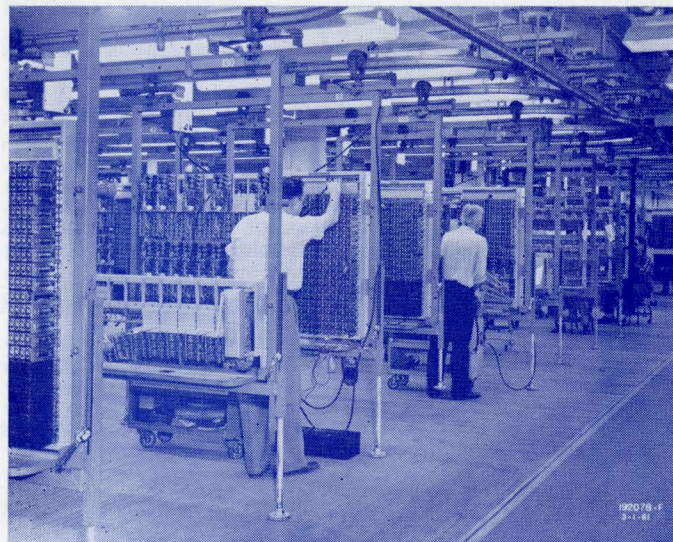
Tuesday, October 9

9:00 a.m. - Radio Communication - II

- CP62-1428. A Multi-channel 4KMC Tropospheric Scatter System. L. D. Westenburg, Collins Radio Co.
- CP.* A 150 MC Personal Signalling System for Seattle, Washington, J. M. Scoville, W. J. Radecki, Pacific Northwest Bell Tel. Co.



Marina City, an all electric, residential, commercial and recreational development



Manufacture of telephone equipment at Western Electric Hawthorne Plant

9:00 a.m. — Communication Switching, Data Communication & Telegraph Systems

- CP.* Telegraph By-Pass Switching for Priority Calls. R. T. Campbell, North Electric Co., E. Lounsbury, Philco Corp.
- CP.* The 6-A Noise Counter and Its Applications. J. H. Fennick, D. L. Favin, Bell Telephone Labs., Inc.
- 62-1375. A High-Accuracy Motor Drive System for Facsimile Equipment. D. W. Wax, Minneapolis-Honeywell Regulator Co.
- 61-1066. Transistorized 2x24 Channel Carrier Telegraph Equipment. K. Takahashi, T. Kishigami, Nippon Telegraph & Telephone Public Corp., T. Matsuzaki, K. Sakurai, Nippon Electric Co., Ltd. (Presentation by title and for written discussion.)
- 62-249. An Ultra-High Speed Microfilm Facsimile System. D. Shaler, Hogan Faximile Corp. (Presentation by title and for written discussion.)
- 62-1415. Federal Aviation Agency Service "A" Data Interchange System (ADIS). F. D. Biggam, S. Silberg, Teletype Corp. (Presentation by title and for written discussion.)
- 62-1416. Teleprinter Margin and Margin Measurements. H. H. Wüsteney, Siemens & Halske A. G. (Presentation by title and for written discussion.)

9:00 a.m. — Radio Noise on H.V. Lines

- 62-1367. An Investigation of Radio Influence Voltages on Transmission and Distribution Lines on the Same Right-of-Way. F. L. Taylor, The Detroit Edison Co., J. F. Bouska, Commonwealth Edison Co.
- CP62-1405. Method of Evaluating Corona Noise Generation From Measurements on Short Test Lines. M. C. Perez, The Hydro-Electric Power Commission of Ontario.
- 62-1406. Experimental Comparisons of Radio Influence Fields from Short and Long Transmission Lines. C. R. Bond, R. E. Graham, Ohio Edison Co., W. E. Pakala, J. E. O'Neil, Westinghouse Electric Corp.

9:00 a.m. — Switchgear

9:00 a.m. — Minimization Techniques

The papers in this symposium of five sessions will be available as special publication S-141 at or after the meeting.

Minimal Third Order Expression of a Boolean Function. A. R. Meo, Istituto Elettrotecnico Nazionale.

Research and Algorithms in the Theory of Boolean Formulas. E. W. Samson, Air Force Cambridge Research Labs., L. Calabi, Parke Mathematical Labs.

The Algebra of Boolean Formulas: Some Criteria for Minimality. L. Calabi, J. A. Riley, Parke Mathematical Labs.

Minimal Boolean Expressions With More Than Two Levels of Sums and Products. E. L. Lawler, Harvard Univ.

9:00 a.m. — Nuclear Power Plants — I

- 62-1343. The NPD Nuclear Power Station Electrical System & the III Statistical Approach to its Design. R. A. Brown, Canadian General Electric Co., Ltd.
- CP62-1364. The NPD Nuclear Power Station Control Area. B. A. Oliver, Canadian General Electric Co., Ltd.
- CP.* Electric Features of the SELNI Enrico Fermi Atomic Power Plant. B. H. Axelson, Westinghouse Electric Corp., J. R. Hulley, Gibbs & Hill, Inc., A. Zambelli, Societa Elettro-nucleare Italiana.
- CP62-1373. Reactor Containment Vessel — Electrical Penetrations for the Carolinas-Virginia Tube Reactor Project. E. T. Witt, R. E. Andrews, Stone & Webster Engineering Corp.

9:00 a.m. — ALGOL Tutorial

- CP.* History and Development of ALGOL. C. Katz, General Electric Co.
- CP.* ALGOL — A Simple Explanation. R. F. Clippinger, Honeywell Electronic Data Processing.
- CP.* User Experience with ALGOL. G. H. Jones, Burroughs Corp.
- CP.* User Experience with ALGOL. R. Steck, Armour Research Foundation.

2:00 p.m. — Transmission Lines — Radio Noise & Line Constants

- CP62-1350. Apportionment of Observed Broadband Noise Among Power Systems. W. R. Foley, R. E. Frese, U. S. Army Electronic Proving Ground.
- 62-1369. Equigradient Lines in the Vicinity of Bundle Conductors. III A. S. Timascheff, Aluminum Company of Canada, Ltd.
- CP62-1387. Electromagnetic and Electrostatic Transmission Line Parameters by Digital Computer. M. H. Hesse, General Electric Co.

2:00 p.m. — Nuclear Power Plants — II

- CP.* Control and Transient Performance — RWE Nuclear Power Plant, Kahl, Germany. M. A. Head, General Electric Co.
- CP62-1399. The Advanced Epithermal Thorium Reactor Concept for Power Utility Application. D. T. Eggen, Atomics International.
- CP.* Development Objective of the Army Nuclear Power Program. J. D. Griffith, Div. of Reactor Development, AEC.
- 62-1429. Thermionic Nuclear Reactors. E. F. Gyftopoulos, G. N. I. Hatsopoulos, Massachusetts Inst. of Technology (Presentation by title and for written discussion).
- 62-1436. Static Nuclear Thermoelectric System for Space. T. E. Kueser, P. S. Merrill and F. G. Tauch, Westinghouse Electric Corp.

2:00 p.m. — Switchgear

2:00 p.m. — Sequential Circuits — I

The papers in this symposium of five sessions will be available as special publication S-141 at or after the meeting.

Machine Properties Preserved Under State Minimization. C. C. Elgot, J. D. Rutledge, IBM Research Center.

A Procedure for Obtaining an Economical Asynchronous Sequential Circuit Directly from a Set of Regular Expressions. B. Hazeltine, Brown University.

States of Sequential Machines Whose Logical Elements Involve Delay. F. E. Hohn, University of Illinois.

Reduction of Feedback Loops in Sequential Networks and Carry Leads in Iterative Networks. E. J. McCluskey, Jr., Princeton University.

2:00 p.m. — Thermoelectric Devices

- CP.* Optimization of Thermoelectrically-Cooled Infrared Detectors. G. F. Boeson, P. F. Fenlon, A. D. Reich, Borg-Warner Corp.
- CP.* A 45-Watt Thermoelectric Generator for Field Use. M. Barmat, General Instruments Corp.
- CP.* Encapsulated Rectilinear Thermoelectric Couples for Use With Various Heat Sources. W. J. van der Grinten, General Electric Co.

2:00 p.m. — Electric Space Heating

Wednesday, October 10

9:00 a.m. — Signal Theory

- CP.* The Space of Essentially Time and Band-Limited Signals. H. O. Pollak, Bell Telephone Labs., Inc.
- CP.* Orthonormal Exponentials. D. C. Ross, IBM Federal Systems Div.
- CP62-1378. A Note on Orthogonal Digit Coding. L. Kurz, New York University.
- 62-1358. Two Dimensional Signal Representation Using Prolate Spheroidal Functions. D. A. Landgrebe, G. R. Cooper, Purdue University.
- 62-1379. Adaptive Digital Communication for a Slowly Varying Channel. G. Lieberman, RCA. (Presentation by title and for written discussion.)
- 62-1439. Markov Processes in Communication Networks. W. S. Litchman, ITT Communication Systems, Inc., D. I. Epstein, Adcom, Inc. (Presentation by title and for written discussion.)

9:00 a.m. — Communication Switching — I

- CP62-1424. Premium Autollizer Toll Ticketing. D. A. Dion, North Electric Co.
- 62-1356. Reducing Operator Effort on Person-To-Person Calls, by Automatic Toll Ticketing. R. B. King, Automatic Electric Labs., Inc.
- CP62-1391. Automatic Number Identification. B. R. DeMaeyer, Illinois Bell Telephone Co.
- CP62-1422. A Local Area Integrated PCM Telephone Network. C. Dumousseau, ITT Federal Labs.

9:00 a.m. — Industrial & Commercial Power Systems

- 62-1377. Bibliography of Industrial System Coordination and Protection Literature. AIEE System Coordination and Protection Sub. of the AIEE Industrial and Commercial Power Systems Committee, D. S. Brereton, Chairman.
- CP62-1417. Symposium: The Influence and Effect of Various Code Making and Enforcing Organizations on Power Distribution in Industrial and Commercial Buildings. W. A. Farquhar, Underwriters Labs., Inc., W. P. Hogan, Jr., Bureau of Electrical Inspection, L. D. Price, National Electrical Manufacturers Association, F. H. Roby, Federal Pacific Electric Co., J. St. Andre, B. A. Wesche Electric Co., B. Whitaker, Underwriters Labs., Inc.

9:00 a.m. — Solid State Devices

- 62-202. Charge-Step Derived Transfer Functions for the Junction Transistor. C. J. Bader, Burroughs Corp. (Presentation by title and for written discussion.)
- 62-1403. Semiconductor Sheets for the Manufacture of Semiconductor Devices. S. N. Dermatis, J. W. Faust, Jr., Westinghouse Electric Corp. (Presentation by title and for written discussion.)



McCormick Place, location of the National Electronics Conference

CP62-1404. Charge Model of Fast Transistors and Measurement of Charge Parameters by High Resolution Electronic Integrator. C. L. Hegedus, IBM Corp.

62-1392. Artificial Commutation of Static Converters. J. R. Toth, I K. M. Chirgwin, Jack & Heintz, Inc., J. D. Schoeffler, Case Inst. of Technology.

9:00 a.m. — Generating Station Auxiliary Power Systems

- 62-1400. Reappraisal of Auxiliary Supply and Controls for Avon III No. 8. C. F. Paulus, K. L. West. C. Rush, The Cleveland Electric Illuminating Co.
- 62-1393. Auxiliary Systems for 600-1500 MW, 3500 PSIG Steam Turbine-Generator Units. S. L. Corbin, J. J. Heagerty, D. L. Weller, General Electric Co.
- CP.* Etiwanda Steam Station Auxiliary Power System. D. H. Steele, C. Savitch, Southern California Edison Co.
- CP62-1360. Emergency Transfer of Power Plant Auxiliaries. R. A. Larner, H. R. McKenzie, Texas Electric Service Co.

9:00 a.m. — Sequential Circuits — II

The papers in this symposium of five sessions will be available as special publication S-141 at or after the meeting.

The Synthesis of Generalized Cascade Circuits. R. E. Levien, The Rand Corp.

Some Theorems for Incompletely Specified Sequential Machines with Applications to State Minimization. J. Beatty, R. E. Miller, IBM Research Center.

Bounded-transient Automata. S. Winograd, IBM Research Center.

Generalized Automata and their Information Losslessness. S. Even, Sperry Rand Research Center.

9:00 a.m. — Substations Round Table — I

2:00 p.m. — Communication Switching — II

- CP.* DYNALOGIC — Its Application to a Telephone Switching Center. B. Brightman, General Dynamics/Electronics.
- CP.* DYNALOGIC — Its Application to Impulse Analysis and Common Control for a Telephone System. G. Richards, W. Bartlett, General Dynamics/Electronics.
- CP.* Development of a Multi-Channel PAM Telephone Transmission System. R. Scott, T. Stump, General Dynamics/Electronics.
- CP.* High Speed Storage and Switching Circuits for a DYNALOGIC Switching System. J. Shirman, G. Sager, General Dynamics/Electronics.

CP.* Design for Maintainability and Reliability for Commercial Switching Systems. H. Pitlik, W. Karas, General Dynamics/Electronics.

2:00 p.m. — Industrial Control

2:00 p.m. — Excitation Systems

62-1347. EHV System Overvoltages Following Load Rejection of III Hydraulic Generation. P. L. Dandeno, K. R. McClymont, The Hydro-Electric Power Commission of Ontario.

62-1346. Analogue Computer Studies of System Overvoltages Following Load Rejections. F. P. deMello, A. C. Dolbec, D. A. Swann, M. Temoshok, General Electric Co.

62-1402. Some Transient Stability Problems Connected with Displacement Governors. A. K. El-Kharashi, Ain-Shams Univ.

2:00 p.m. — Combinational Problems

The papers in this symposium of five sessions will be available as special publication S-141 at or after the meeting.

Synthesis of Combinational Logic Using Three-input Majority Gates. S. B. Akers, Jr., General Electric Co.

A Realization Procedure for Threshold Gate Networks. P. M. Lewis, C. L. Coates, General Electric Co.

A Class of Self-dual Threshold Functions and Lower Bounds of the Number of Threshold Functions and Maximum Weight. S. Muroga, IBM Research Center.

On Some Transformation Theorems in Many-valued Logical Systems. C. K. Tung, General Electric Co.

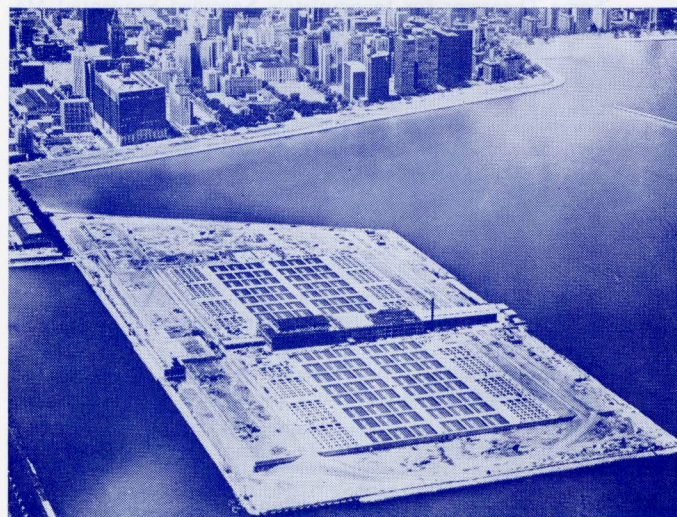
2:00 p.m. — Substations Roundtable — II

Thursday, October 11

9:00 a.m. — Communication Switching — III

This session will include a demonstration of the actual Chicago Police Communications Center located nearby.

CP.* The Need for an Expanded Police Communication System in Chicago. Lt. W. Miller, Chicago Police Dept.



New filtration plant of the city of Chicago

CP62-1426. Voice Switching Considerations — Chicago Police Department Communications System. C. M. McLaughlin, Illinois Bell Telephone Co.

CP62-1425. Radio Communications System Design — Chicago Police Communications System. J. Rasmuson, Motorola, Inc.

CP62-1418. Teletypewriter Communications System for the Chicago Police Department. E. A. Hilker, Automatic Electric Labs., Inc.

9:00 a.m. — Energy Developments

CP.* 300 KWE Fast Reactor with Thermionic Element. C. P. Stanford, The Martin Co.

CP62-1401. Liquid Metal Faraday-Type MHD Generators. W. D. Jackson, Mass. Inst. of Technology.

CP.* Arc MHD Generator. E. C. Kehoe, Scientific Developments, Inc.

9:00 a.m. — Direct Current Machinery

62-1348. Dissymmetry in D.C. Rotating Electrical Machines. J. E. Diehl, Stackpole Carbon Co.

62-1374. Digital Calculation of No-Spark Zones of Large D-C Machines. S. Wada, K. Ootake, Tokyo Shibaura Electric Co., Ltd.

CP62-1372. D-C Machine with Solid State Commutation. T. G. Wilson, Duke University, P. H. Trickey, Sperry Rand Corp.

62-1359. The Development of Torque in Slotted Armatures. A. S. Langsdorf, Washington Univ.

9:00 a.m. — Computer Use in Power System Analysis

62-1353. Analysis of Networks with Complex Autotransformers — Part I: The Driving Point and Transfer Impedance Matrix. H. H. Happ, General Electric Co.

CP62-1409. Minimizing Power Transmission Losses by Reactive Volt Ampere Control. H. M. Smith, Jr., Shih-Yung Tong, University of Vermont.

CP62-1427. Effects of Capacitors on Generation and Interchange. J. P. O'Brien, Illinois Power Co.

9:00 a.m. — Forum on Proposed American Standard Code for Information Interchange

CP.* History and Organization for the Establishment of American Data Processing Standards. J. B. Booth, Teletype Corp.

CP.* Technical Features of the Proposed ASCII. T. H. Bonn, Remington Rand Univac.

CP.* Implementation Considerations of the Proposed ASCII and Its Relationship to Other Codes. C. E. Mackenzie, IBM Corp.

9:00 a.m. — Control Systems — I

62-1382. Quenching of Adaptive Control System Response to Test Signal. R. Oldenburger, L. J. Schrock, Purdue Univ.

62-1383. Minimum-Fuel Feedback Control Systems: Second-Order Case. M. Athanassiades, Massachusetts Inst. of Technology.

62-1384. Transient and Stability Studies of Multivariable Control Systems by the Method of Linear Transformations. Mrs. C. Lakshmi-Bai, R. L. Kashyap, Indian Inst. of Science.

62-76. Multi-Parameter Self Adaptation Using Auxiliary Models. K. W. Han, G. J. Thaler, U. S. Naval Postgraduate School. (Presentation by title and for written discussion.)

62-94. Modern Synthesis of Computer Control Systems. J. T. Tou, Northwestern Univ., P. D. Joseph, Space Technology Labs., Inc. (Presentation by title and for written discussion.)

Friday, October 12

9:00 a.m. — Computer Elements — I

CP62-1420. The Design of Biasing Networks for Circuits Containing More Than One Non-Linear Element. L. P. Huelsman, University of Arizona (formerly with Univ. of California).

CP.* Lumped Charge Model of a Junction Diode and Its Application for Theoretical Analysis of High Speed Diode Logic Circuits. Yohan Cho, The Mitre Corp.

CP.* Expanded Application for Acoustic Delay Line Devices Through Functional Design. C. E. Wellman, General Electric Co.

CP62-1394. Statistical Design and Reliability Study of Neon Photoconductor Circuits. J. L. Patterson, IBM Corp.

9:00 a.m. — Wire Communications — II

CP.* New 12-Channel Carrier System for EAS Trunk and Subscriber Service. O. A. Jorgensen, General Dynamics/Telecommunication.

CP.* Repeater for New 12 Channel Carrier System. D. Rimlinger, General Dynamics/Telecommunication.

CP.* The T1 Carrier System — Philosophy & General Features. D. F. Hoth, Bell Telephone Labs., Inc.

CP.* The T1 Carrier System — System Description. P. J. Greene, Bell Telephone Labs., Inc.

CP.* The T1 Carrier System — Application Planning. P. W. Erickson, Illinois Bell Telephone Co.

9:00 a.m. — Synchronous Machinery

CP62-1390. Detecting and Locating Interturn Short Circuits on Turbine-Generator Rotors. P. K. Hermann, AEG, Research Inst., R. Mahrt, H. H. Doon, Burns and Roe, Inc.

CP62-1363. An Experimental Study of Cooling Flow Distribution in a Model Alternator. R. J. Munton, E. Markland, Univ. of Nottingham.

62-1368. Determination of the Magnetic Field in the End Zone of Turbine Generators. J. A. Tegopoulos, Westinghouse Electric Corp.

62-1352. Permanent Magnet Generators — Part II: Optimum Design. D. J. Hanrahan, D. S. Toffolo, U. S. Naval Research Lab.

9:00 a.m. — Substations

62-1388. Electrical Features of the High Voltage Switchyard — III Niagara Power Project. L. M. Berry, Charles T. Main, Inc.

CP62-1354. Cost Reduction in Tower Design for Fault Bus Relay Protection. G. E. Heidenrich, The Cincinnati Gas & Electric Co.

2:00 p.m. — Wire/Switching — I

62-1407. Tone-Selective Waystation Dialing System Interconnects I "Message" and Regular Telephone Line. E. L. Roback, Automatic Electric Labs., Inc.

CP62-1361. New Coin-Control and Ringing Techniques for End Offices. W. A. Lindbloom, Automatic Electric Labs., Inc.

CP62-1355. Automatic Routine Testing of Exchange Trunks. J. P. Jallits, Automatic Electric Labs., Inc.

CP62-1351. Telecommunication System of Israel. W. Fondiller, Consulting Engineer, New York City, M. J. Guy, M. E. Berman, Israel Ministry of Posts.

2:00 p.m. — Hydro-Thermal Co-ordination

62-1410. Susquehanna River Short Range Hydro-Thermal Co-ordination. L. T. Anstine, Baltimore Gas and Electric Co., R. J. Ringlee, General Electric Co.

CP62-1341. Computer Program to Simulate Operation of Electric Generating System. H. B. Behm, Columbus and Southern Ohio Electric Co.

62-1366. Optimum Scheduling of Hydrothermal Systems — A Generalized Approach. B. G. Sockappa, The Mitre Corp.

62-1411. Hydrothermal Economic Scheduling — Part V: Scheduling a Hydrothermal System with Interconnections. B. Bernholtz (formerly with the Hydro-Electric Power Commission of Ontario), University of Toronto, L. J. Graham, The Hydro-Electric Power Commission of Ontario. (Presentation by title and for written discussion.)

2:00 p.m. — Fractional-Horsepower and Induction Machinery

62-1345. An Analysis of the Hysteresis Motor — Part I: Analysis of the Idealized Machine. M. A. Copeland, G. R. Slemmon, Univ. of Toronto.

CP62-1423. Equivalent Circuits with Transformer Elements for Eddy Current Rotor Induction Motors Derived from the Field Equations: Part I. — Sleeve Rotor Motors. W. H. Koch, Univ. of California.

62-1389. Saturistors and Low Starting Current Induction Motors. P. L. Alger, Rensselaer Polytechnic Inst., G. Angst, W. M. Schweder, General Electric Co.

CP62-1413. A Study of the Double-Delta Reduced Voltage Starting Method. J. J. Courtin, Westinghouse Electric Corp.

62-1414. Economics, Evaluation & Trends of High Temperature Motors. V. J. Picozzi, General Electric Co. (Presentation by title and for written discussion.)

2:00 p.m. — Control Systems — II

CP.* Transfer Function Tracking of a Linear Time Varying System by Means of Orthogonal Networks. N. N. Puri, Drexel Inst. of Technology, C. N. Weygandt, Univ. of Pennsylvania.

CP62-1385. Redundancy Techniques for Reliable Flight-Control Computers. J. J. Fleck, General Electric Co.

CP62-1386. Feedback Control System Analysis with a Digital Computer — Part I: Theory and Techniques. R. W. Steinman, W. S. King, The Boeing Co.

CP.* Integral Control in Sampled-Data Control Systems. D. L. Baker, North American Aviation, Inc.

CP62-1421. Mathematical Impulse Techniques in the Analysis of Control Systems. G. E. Gless, Univ. of Colorado.



Peacock Alley in the Pick-Congress Hotel

AIEE FALL GENERAL MEETING

9:00 a.m. — Power System Planning

- 62-1371. Load Growth Characteristics as Related to Generating III Capacity Additions. C. W. Watchorn, Pennsylvania Power & Light Co.
- 62-1344. Determination of Reserve Requirements of Two Inter-connected Systems. V. M. Cook, M. J. Steinberg, Consolidated Edison Co. of N. Y., Inc., C. D. Galloway, A. J. Wood, General Electric Co.
- CP62-1412. Distribution Planning and All-Electric Load Building. A. D. Bertollett, W. J. Cloues, Philadelphia Electric Co.

9:00 a.m. — Basic Sciences

- CP62-1380. The Graphical Solution of Linear Circuits in the Steady State — I. E. W. Boehne, I-T-E Circuit Breaker Co.
- 62-1365. Adaptation of a Numerical Technique for Solving Static I Field Problems to Rigid Magnets. P. V. Raab, D. Henkel, Allen-Bradley Co.
- CP.* An Approach to the Unified Theory of Electric Machines. R. N. Sudan, Cornell Univ.
- CP.* Functions Annihilable by Sampling. J. P. L. Ho, C. A. Halijak, Kansas State Univ.
- CP.* Subarea Determination of the Capacitance of Coaxial Conical Capacitors. T. J. Higgins, F. J. Kriegler, Univ. of Wisconsin.

Continued from page 2

and filter units are located on both sides of the operation center and cover about 31 acres. A 69-million gallon filter water reservoir is located at the west end of the plant.

Thursday, October 11, morning — Western Electric Company. AIEE members and guests will have a chance to tour the Hawthorne Plant of Western Electric Company, the manufacturing arm of the American Telephone and Telegraph Company. To make the many and varied pieces of equipment used by the operating companies of AT&T, the Hawthorne Plant includes a rod and wire mill, a cable plant, and step-by-step shops. The tour will also visit examples of light and heavy manufacturing operations. Limit for the tour — 40.

Thursday, October 11, afternoon — Gary Works of U. S. Steel Company. Conceived and operated as an integrated steel plant, Gary Works of U. S. Steel Company stretches for five miles along Lake Michigan and one and one-half miles inland just north of Gary, Indiana. The plant receives iron ore from the great Mesabi Range in Minnesota, millions of tons of limestone from quarries in Michigan, and coal from Pennsylvania and West Virginia.

From these basic raw materials, the plant turns out more than 40,000 sizes and shapes of steel products in its merchant mills. Products include plates, shapes, bars, and slabs for steel sheets, plus rods, rails and railroad car wheels and axles.

Trip members will have a conducted tour that will show them every step in the making of steel. Facilities to be seen include a row of 12 blast furnaces, open hearths, primary mills and finishing mills. The plant has within its boundaries 250 miles of railroad tracks and 65 miles of paved roadway. Limit for the tour — 40.

LADIES' ACTIVITIES: During the morning hours of each week-day, Room 900 of the Pick-Congress Hotel will be the headquarters for the ladies of AIEE members and guests. A good way to start each day will be to have coffee in Room 900 starting at 9:30 A.M.

Tickets for ladies' activities will be available each morning in Room 900 for the event of the day and for following days. It is not intended to have tickets for each event available "at the door" so be sure to obtain all your desired tickets early, especially where participation in an event is limited.

Information will be on hand for those attractions and diversions in the Chicago area that hold particular appeal for the ladies. In addition, Room 900 will be available for messages, and lost and found articles will be kept there for their owners.

Monday, October 9, 1:00 P.M. — Petite Luncheon. The Petite Luncheon for ladies only will be served in the Pick-Congress. Following the meal Phillips Florist will offer a flower arrangement demonstration using artificial and "dried" flowers. Price, about \$2.50.

2:00 p.m. — Wire Communications — III.

- CP62-1408. A Method of Estimating the "1% Minimum" Crosstalk Loss (for Voice Frequencies) in a Paired Cable, Without Empirical Data. D. Aviv, M. Landis, RCA.
- CP.* Radio Frequency Interference in Carrier Telephone Systems. R. L. Davis, Bell Telephone Labs., Inc.
- CP62-1438. A Special Purpose Cordless Telephone. R. H. Hoggund, E. E. Reinke, Pacific N.W. Bell Telephone Co.
- CP.* A Unique Frequency Generating System for a Transistorized 600-Channel Single-Sideband Frequency Division Multiplex Equipment. J. H. Ingram, G. M. Ohlen, Collins Radio Co.

2:00 p.m. — Computer Elements — II.

- CP62-1395. Piece-Wise Linear Analysis Applied to Design of Integrated Logic Circuits. W. C. Seelbach, N. Miller, Motorola, Inc.
- CP.* Non-Linear Feedback Technique Applied to a High-Speed Computer Logic Element. C. E. Ruoff, IBM Corp.
- CP62-1396. Transistor Push-Pull Logic. R. S. Lewis, Lockheed Missiles & Space Co.
- CP62-1397. Resistor-Transistor-Backward Diode Nanosecond Logic. W. R. Smith, Iowa State Univ.

Tuesday, October 10, noon — Playboy Club Lunch. A lunch and entertainment is planned in the Play Room of the internationally known Playboy Club of Chicago, 112 E. Walton Street, on the near North Side. To give the ladies a morning of relaxed and individual activity in the downtown area, it is planned not to have transportation arranged to the Playboy Club, but to leave the transportation flexible.

The Playboy Club is a short cab ride from downtown or may be reached by buses going north on Michigan Avenue from Randolph Street or north. Lunch will be followed by entertainment provided by Miss Fern Fels, a monologist. Price, about \$3.75. Limit for this event — 120.

Wednesday, October 11, morning — Oakbrook Shopping Center. Buses will leave the hotel at 10:00 A.M. for one of Chicago's newest and largest shopping areas, the Oakbrook Shopping Center. This project has such stores as Marshall Field, Bonwit Teller, and Best's, plus a variety of smaller specialty shops. After a visit to these shops, there will be a lunch at the Red Room of Henrici's at 1:30 P.M. Lunch will be followed by a performance of the Sweet Adeline Singers. Price, about \$3.50.

Thursday, October 12, afternoon — Dessert Tea. A demonstration of the latest styles and fashions in wigs will be presented in the Pick-Congress at 2:30 P.M., followed by a dessert tea. Price, about \$1.75.

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The members of the 1962 Fall General Meeting Committee are: D. W. Gilman, Chairman; D. R. Whitlow, Vice Chairman; L. E. Ackmann, Secretary; and T. Donaldson, Treasurer. F. D. McGuire, Fall Frolics; W. C. Wiechmann, Hospitality; J. M. Henderson, Hotel Arrangements; P. Casterline, Finance and Budget; E. H. Shintani, Paper Sales; R. Anderson, Technical Program; Mrs. D. W. Gilman, Ladies' Activities; R. A. Nelson, Ticket Sales; W. A. Baxter, Registration; J. G. Miller, Trips and Transportation; J. R. Wessling, General Session; and Frank Kovalcik, Publicity.

By action of the Board of Directors on June 22, 1962, it is contrary to the interests and policy of the Institute to conduct organized recruiting at conventions or expositions except under special circumstances where advance approval of the Institute in writing has been obtained.

Issued by

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
345 East 47th Street, New York 17, N. Y.

PRINTED IN U.S.A.