

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS



WINTER

GENERAL MEETING

FEBRUARY 1-6, 1959

HOTEL STATLER • NEW YORK CITY, N. Y.

Please retain this Program
for use during entire Meeting

GENERAL INFORMATION

Our Winter General Meeting this year features the largest number of technical sessions ever organized for an Institute meeting. A group of inspection trips has been arranged closely allied with the technical sessions. On the social side, there will be the Eta Kappa Nu Annual Banquet, a smoker, a dinner-dance and special entertainment for the ladies.

Mr. James R. Killian, Chairman of the Corporation of the Massachusetts Institute of Technology and Chairman of the President's Science Advisory Committee, will deliver the principal address at the General Session to be held at 2:00 p.m., Monday, February 2nd. At this session the Medal in Electrical Engineering Education will be presented to Prof. John F. Calvert, the Alfred Nobel Prize Paper award will be presented to Ghaffar Farman-Farmaian, and the Edison Medal will be presented posthumously to Dr. Charles F. Kettering. The Institute Prize Paper Awards will also be awarded and President L. F. Hickernell will address the members assembled.

In determining the technical sessions and committee meetings you wish to attend please note that several have been assigned to the Hotels Sheraton-McAlpin and Governor Clinton. Note that in fairness to all concerned and due to the lack of display space only institute notices will be permitted during the meeting. This will prohibit the posting of any advertising or position opportunity notices.

Registration Fees Required. The Board of Directors has arranged for a special registration fee to be tried out at this meeting for those who wish to attend only a few sessions. A one-day registration fee of \$2.00, for members and nonmembers alike, is available on arrival at the Meeting. The full week registration fee of \$5.00 for members and \$8.00 for nonmembers will remain unchanged. Student members and the immediate families of members are not required to pay any fee.

Information on all features may be obtained at the registration desk. Efforts will be made to deliver telegrams and messages promptly. Members who expect to receive mail are asked to inquire frequently at the mail and information desk.

Technical Sessions and Discussions are covered by the "Technical Sessions Guide" at the discretion of the presiding officers. Usually 10 minutes will be allowed for the presentation of each paper and 5 minutes for each discussion. To receive consideration for publication, discussion on TRANSACTIONS Papers in duplicate must be sent to Edward C. Day, Assistant Secretary, Technical Operations Department, AIEE, 33 West 39th Street, New York 18, New York, before February 20, 1959. Discussions received later may not be included, depending upon the printing schedule of the paper to which the discussion is directed. The original typewritten double spaced copy, together with original illustrations as photographs or inked tracings should be submitted.

Advance Copies of Papers may be purchased by members at the technical papers desk at the uniform price of \$.40 each (\$.80 to nonmembers). Only numbered papers are available. Mail orders should be addressed to the AIEE Order Department, 33 West 39th Street, New York 18, New York. The TRANSACTIONS Papers will also be published in the Bimonthly Publications. Note: Unnumbered Conference Papers (CP.*) may be available for sale 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.

SCHEDULE OF EVENTS

(See Separate Folder for Entertainment, Inspection Trips and Points of Interest)

SUNDAY—FEB. 1

2:00 P.M.

Registration Starts
Mezzanine

4:00 P.M.

Informal Tea
Statler Penn Top

MONDAY—FEB. 2

10:00 A.M.

Industrial Mercury-Arc and Semiconductor Power Rectifiers
Engineering Societies Building Auditorium

Transmission and Distribution
Hotel McAlpin Ballroom

Transformers
Hotel Statler Terrace Room

Rotating Machinery
Hotel Statler Penn Top South

Computers in Control Systems
Hotel Statler Penn Top North

Comparison of Electron Tubes With Semi-Conductor Devices
Hotel Statler East Room

Russian Education and Technology
Hotel Statler West Room

Electric Heating
Hotel McAlpin Colonial Room

Management
Hotel Statler Georgian Room

Cathodic Protection
Hotel McAlpin Crystal Room

Modern Circuit Techniques—I
Hotel McAlpin East Room

Educational TV
Hotel Statler Skytop

Data Communication
Hotel Governor Clinton Governor Room

Radio Communication Systems
Hotel McAlpin Red Room

Nuclear Power Plants—I
Hotel Statler Gold Ballroom

Electronics Transformers—I
Hotel Governor Clinton Chelsea Room

Rotating Machinery
Engineering Societies Building Room 502

2:00 P.M.

General Session
Hotel Statler Ballroom

TUESDAY—FEB. 3

9:00 A.M.

- Symposium on Conductor Vibration
Hotel Statler Ballroom
- Transformers
Hotel McAlpin Ballroom
- Rotating Machinery
Hotel McAlpin Colonial Room
- Case Histories of Computers in Automatic Control
Hotel McAlpin Red Room
- Electrical Insulation
Hotel Statler Georgian Room
- Electronics Transformers—II
Hotel Governor Clinton Chelsea Room
- Power Sources for Satellites
Hotel Governor Clinton Greeley Room
- Industrial & Commercial Power Systems
Hotel Statler Terrace Room
- Recognition in a Profession
Hotel Statler West Room
- Data Communications
Hotel Statler Gold Ballroom
- Radio Communications
Hotel Statler East Room
- Symposium on Today's Application Considerations—Mercury,
Mechanical and Semi-Conductor Power Rectifiers
Hotel McAlpin Crystal Room
- Travelling Waves Tube Development
Hotel Statler Skytop
- Nuclear Power Plants—II
Hotel Statler Penn Top South
- Taso Report and Stereo Hi-Fi
Engineering Societies Building Auditorium
- Modern Circuit Techniques—II
Engineering Societies Building Room 502

9:30 A.M.

- Section Representatives Conference
Hotel Statler Penn Top North

2:00 P.M.

- Symposium on Wood vs. Steel for EHV Transmission Lines
Hotel Statler Ballroom
- Transformers
Hotel McAlpin Ballroom
- Rotating Machinery
Hotel McAlpin Colonial Room
- Adaptive Control Systems
Hotel McAlpin Red Room

TUES. (Continued)

- Electrical Insulation
Hotel Statler Georgian Room
- New Electron Tube Developments
Hotel Governor Clinton Chelsea Room
- Solid State Devices
Hotel Governor Clinton Greeley Room
- Industrial and Commercial Power Systems
Hotel Statler Terrace Room
- Recording and Controlling Instrumentation
Hotel McAlpin East Room
- Section Representatives Conference
Hotel Statler Penn Top North
- Batteries
Hotel McAlpin Crystal Room
- Modern Circuit Techniques—III
Hotel Statler Skytop
- Nuclear Power Plants—III
Hotel Statler Penn Top South
- Video Tape Facilities and TV Antennas
Engineering Societies Building Auditorium
- Radio Communications Systems
Hotel Statler East Room
- The Motivation Multiplier in Electrical Engineering Education
Hotel Statler Gold Ballroom
- Rotating Machinery
Hotel Statler West Room

WEDNESDAY—FEB. 4

9:00 A.M.

- Transmission and Distribution
Hotel Statler Georgian Room
- Power System Communications
Hotel McAlpin Crystal Room
- Rotating Machinery
Hotel Statler Penn Top North
- Computers in Nuclear Systems
Hotel Statler West Room
- Electrical Insulation
Hotel Statler Penn Top South
- Ceramic Tube Developments
Hotel Statler East Room
- Production and Application of Light
Hotel Statler Skytop
- Nonlinear Control Systems
Hotel Statler Terrace Room
- Industrial Power Rectifiers
Hotel Statler Gold Ballroom

WED. (Continued)

Integrating Instruments
Hotel McAlpin East Room

The Road to Scientific Supremacy
Hotel Statler Ballroom

Transformers
Hotel McAlpin Ballroom

Semiconductor Switching Devices—I
Hotel McAlpin Red Room

Telegraph Systems
Hotel Governor Clinton Greeley Room

Training in Communications
Hotel McAlpin Colonial Room

Rotating Machinery
Hotel Governor Clinton Chelsea Room

Modern Circuit Techniques—IV
Engineering Societies Building Room 502

1:45 P.M.

Presentation of the Fritz Medal to Dr. M. J. Kelly
Hotel Statler Ballroom

2:30 P.M.

Transmission and Distribution
Hotel Statler Georgian Room

System Engineering
Hotel Statler Ballroom

Switchgear
Hotel Statler Skytop

Rotating Machinery
Hotel Governor Clinton Chelsea Room

Digital Computer Techniques
Hotel Statler West Room

Electrical Insulation
Hotel Statler Penn Top South

Transients in Rectifier Circuits
Hotel Statler East Room

Theory and Practice of Reactor Control
Hotel Statler Terrace Room

Power Systems Communications and Relays
Hotel McAlpin Ballroom

Industrial Power Rectifiers
Hotel Statler Gold Ballroom

Drive Systems for Rolling Mills
Hotel McAlpin Crystal Room

Semiconductor Switching Devices—II
Hotel McAlpin Red Room

Communications in Space
Hotel Statler Penn Top North

WED. (Continued)

Telegraph Systems
Hotel Governor Clinton Greeley Room

Wire Communications Systems
Hotel McAlpin Colonial Room

Indicating Instruments
Hotel McAlpin East Room

Rotating Machinery
Engineering Societies Building Room 502

8:00 P.M.

Transients in Rectifier Circuits
Hotel Statler East Room

Automation in the Soviet Union
Hotel Statler Terrace Room

THURSDAY—FEB. 5

9:00 A.M.

Power System Operation—Maintenance Costs
Hotel Statler Ballroom

Switchgear
Hotel McAlpin Ballroom

Relays and Rotating Machinery
Hotel Governor Clinton Governor Room

Electrical Insulation
Hotel McAlpin Red Room

Communication Theory
Hotel Statler Penn Top North

Electric Space Heating and Heat Pumps
Hotel Statler West Room

Safety
Hotel Statler Terrace Lounge

Symposium on Conventional and Unit-Type Substations in
Distribution Systems
Hotel Statler Georgian Room

Controlled Semiconductor With Non-Linear Magnetic Devices
Hotel Statler Penn Top South

Transmission and Distribution
Hotel Statler Gold Ballroom

Feedback Control Systems for Metal Rolling and Processing
Hotel McAlpin East Room

Insulation Practices
Hotel Statler East Room

Rotating Machinery
Hotel McAlpin Colonial Room

Excitation Systems and Power Plant Auxiliaries
Hotel Statler Skytop

Insulated Conductors
Hotel Statler Skytop

2:00 P.M.

THURS. (Continued)

- Application of Computers to Power System Problems
Hotel Statler Ballroom
- Switchgear
Hotel McAlpin Ballroom
- Analog Computer Techniques
Hotel Statler Penn Top South
- Electrical Insulation
Hotel McAlpin Red Room
- Single-Sideband Theory and Techniques
Hotel Statler Penn Top North
- Programming and Data Processing in the Steel Industry
Hotel Statler Terrace Lounge
- Symposium on Safety by Interlocking and by Intrinsic and Inherent Design
Hotel Statler Gold Ballroom
- Substations
Hotel Statler Georgian Room
- Auxiliaries
Hotel Statler East Room
- Relays
Hotel Governor Clinton Governor Room
- The Specifications of Components for Control Systems
Hotel McAlpin Colonial Room
- Electrical Techniques in Medicine and Biology
Hotel Governor Clinton Chelsea Room
- Communication Switching Systems
Hotel Statler West Room

FRIDAY—FEB. 6

9:00 A.M.

- Distribution Transformer Load Management
Hotel Statler Georgian Room
- Insulated Conductors
Hotel McAlpin Ballroom
- The Young Engineers in the Power Industry
Hotel Statler Gold Ballroom
- Relays, Substations and Switchgear
Hotel Governor Clinton Governor Room
- Electric Utility Application of Digital Computers
Hotel Statler East Room
- Magnetic Amplifiers
Hotel McAlpin Crystal Room
- Basic Sciences
Hotel Statler Penn Top North
- Railroad Traffic Control
Hotel Statler Skytop

FRI. (Continued)

- Industrial Control
Hotel McAlpin Colonial Room
- Chemical Processes and Petroleum Industries
Hotel Statler Terrace Room
- Electronic Switching Systems—I
Hotel Statler West Room
- Feedback Control System—I
Hotel Statler Ballroom
- Reliability and Quality Control
Hotel Governor Clinton Chelsea Room
- Electrostatic Processes
Hotel Statler Penn Top South
- Rotating Machinery
Hotel McAlpin East Room
- Electrical Insulation
Hotel McAlpin Red Room
- 2:00 P.M.
- Insulated Conductors
Hotel McAlpin Ballroom
- Protective Devices
Hotel Statler Penn Top South
- Magnetic Amplifiers
Hotel McAlpin Red Room
- Electric Circuit Theory
Hotel Statler Penn Top North
- Railroad Rolling Stock
Hotel Statler Skytop
- Industrial Control
Hotel McAlpin Colonial Room
- Substations and Switchgear
Hotel Governor Clinton Governor Room
- Chemical Processes and Petroleum Industries
Hotel Statler Terrace Room
- Electronic Switching Systems—II
Hotel Statler Gold Ballroom
- Feedback Control Systems—II
Hotel Statler Ballroom
- Engineering Science and the Demands of Industry
Hotel Statler Georgian Room

MONDAY—Feb. 2

10:00 A.M.

ENG. SOC. BLDG.
AUDITORIUM

Chairman:
L. W. Burton, General
Electric Co.

Sponsor:
Industrial Power Recti-
fiers and Semiconduc-
tor Metallic Rectifiers
Committees

10:00 A.M.

HOTEL McALPIN
BALLROOM

Chairman:
J. K. Dillard, Westing-
house Electric Corp.

Sponsor:
Transmission and Distri-
bution Committee

10:00 A.M.

HOTEL STATLER
TERRACE ROOM

Chairman:
D. L. Levine, Common-
wealth Edison Co.

Sponsor:
Transformers Committee

TECHNICAL PROGRAM

INDUSTRIAL MERCURY-ARC AND SEMICONDUCTOR POWER RECTIFIERS

- CP.* Tests on a Main Mill Drive Ignitron Rectifier Power Supply. W. R. Hodgson, Westinghouse Electric Co.
- CP59-237. Silicon Rectifier Application to Low Voltage Electrolytic Processing. R. C. Scott, Canadian Westinghouse Co., Ltd.
- CP.* Medium-Power Silicon Rectifiers for General Industrial Power Supply. D. W. Borst and L. W. Burton, General Electric Co.

TRANSMISSION AND DISTRIBUTION

- 59-34. An Economic Study of D-C Versus A-C Overhead Transmission. A. J. Wood, S. B. Crary and C. Concordia, General Electric Co.
- 59-108. Progress in Extra-High Voltage Power Transmission. P. A. Abetti and S. B. Crary, General Electric Co.
- 59-66. Work Done in the Soviet Union on High-Voltage Long Distance D-C Power Transmission. A. M. Nekrasov, Ministry of Power Stations of the U.S.S.R. and A. V. Posse, Scientific Research Institute of Direct Current, U.S.S.R. (Re-presented for Discussion only)
- 59-4. Insulation Requirements of High-Voltage Transmission Lines for 115 kv to 460/500 kv. P. L. Bellaschi, Portland, Oregon.
- CP58-1256. Application of Electronic Computers to Structural Design of Transmission Towers. A. M. Lount, A. M. Lount and Associates.

TRANSFORMERS

- 59-243. Automatic Ratio Control Transformer and Regulator. J. S. Malsbary, Wagner Electric Corp.
- 59-65. Static Relay Control for Three Phase Step Regulators. C. J. Kettler and R. L. Elliott, General Electric Co.
- 59-56. The Calculation and Measurement of Axial Electromagnetic Forces on Concentric Coils in Transformers. M. F. Beavers and C. M. Adams, General Electric Co.
- 59-72. Phasor Power Method of Determining Transformer Sequence Impedances. B. A. Cogbill, General Electric Co.

MON. (Continued)

10:00 A.M.

HOTEL STATLER
PENN TOP SOUTH

Chairman:
R. C. Moore, Allis-
Chalmers Mfg. Co.

Sponsor:
Rotating Machinery
Committee

10:00 A.M.

HOTEL STATLER
PENN TOP NORTH

Chairman:
S. Rogers, Convair

Sponsor:
Computing Devices and
Feedback Control Sys-
tems Committees

10:00 A.M.

HOTEL STATLER
EAST ROOM

Chairman:
J. Millman, Columbia
University

Sponsor:
Electronics Committee

ROTATING MACHINERY

- 58-1218. Proposed Test Procedure for Noise Measurements on Rotating Electric Machinery. A Committee Report, C. G. Veinott, Chairman.
- 58-1179. How to Specify the Noise Rating of Large Electric Rotating Machines. M. E. Talaat, Elliot Company.
- CP58-1290. Effect of Air Gap Eccentricity on Motor Sound Level. J. J. Courtin, Westinghouse Electric Corp.
- 58-849. Sources of Electromagnetic Vibration in Single-Phase Induction Motors. L. W. Magyar. (Re-presented for Discussion only)
- 58-1320. Torque and Speed Control of Induction Motors Using Saturable Reactors. J. F. Szablya, University of British Columbia.

COMPUTERS IN CONTROL SYSTEMS

- CP58-1182. Progress in Sampled-Data Systems. E. I. Jury, University of California.
- CP.* Survey of Sampled-Data Systems Analysis. J. V. Howell, Packard Bell Computer Corp.
- 59-52. The Stability and Compensation of Saturating Sampled-Data Systems. F. J. Mullin, California Institute of Technology.
- 58-1291. A General Approach for Obtaining Transient Response by the Use of a Digital Computer. P. E. Lego, Westinghouse Electric Corp. and T. W. Sze, University of Pittsburgh.

COMPARISON OF ELECTRON TUBES WITH SEMI-CONDUCTOR DEVICES

- CP.* Survey of the Relative Status of Solid State Devices and Tubes With Respect to Applications in Army Equipments. K. Garoff and D. P. Salvano, U.S. Army Signal Research and Development Lab.
- CP.* Shall An Electron Tube or a Semi-conductor Device Be Used? E. E. Scheneman and S. K. Waldorf, Westinghouse Electric Corp.
- CP.* Tubes versus Transistors—A Realistic Assessment. R. E. Moe, General Electric Co.
- CP.* Transistors and Tubes in Telecommunications. B. T. Howard, Bell Telephone Labs.

MON. (Continued)

10:00 A.M.

HOTEL STATLER
WEST ROOM*Chairman:*
E. A. Walker, Pennsylvania State University*Sponsor:*
Basic Sciences and Education Committees

10:00 A.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
F. T. Chestnut, Consulting Engineer and Patent Attorney*Sponsor:*
Electric Heating Committee

10:00 A.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
H. B. Kiphuth, Westinghouse Electric Corp.*Sponsor:*
Management Committee

10:00 A.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
A. F. Minor, American Telephone and Telegraph Co.*Sponsor:*
Chemical Industry Committee**RUSSIAN EDUCATION AND TECHNOLOGY**

- CP.* My Experience in the Soviet Educational System. V. Rudolph, New York City (J. A. Strelzoff, Interpreter)
- CP.* A Survey of Russian Education. W. W. Brickman, New York University.
- CP.* Engineering Education in the U.S.S.R. L. Trilling, Massachusetts Inst. of Technology.
- CP.* Russian Technology—Computers and Information. R. K. Honaman, Bell Laboratories.
- CP.* Russian Technology—Solid State and Transistors. W. C. Dunlap, Raytheon Mfg. Corp.
- CP.* Russian Technology—High-Voltage A.C. and D.C. Power Transmission. P. A. Abetti, General Electric Co.
- Panel discussion led by E. A. Walker, Pennsylvania State Univ.

ELECTRIC HEATING

- 59-31. Control of Infrared Radiation. I. J. Barber, The Fostoria II Pressed Steel Corp.
- 59-77. Some Unusual Designs of Electrical Resistance Heating. L. P. Hynes, Haddonfield, N. J.
- 59-30. Rapid Heating of Dielectric Materials at 915 MC. G. E. Feiker and N. C. Gittinger, General Electric Co.
- 59-64. Electric and Magnetic Conditions Inside an Induction Heated Workpiece. C. A. Tudbury, New Rochelle Tool Corp.
- CP59-256. Three Phase Induction Heating Coils, N. V. Ross, Magnethermic Corp.

MANAGEMENT

- CP.* Planning For Methods Improvement. G. A. Antonette, Detroit Edison Co.
- CP.* Work Measurement For The Engineer and For Management. J. F. McQuillin, West Penn Power Co.
- CP58-1145. Managing Research Laboratory Finances. T. M. Linville and C. S. Van Wormer, General Electric Co.
- CP.* Criteria For The Selection Of Engineers For Employment. L. H. Noggle, Westinghouse Electric Corp.

CATHODIC PROTECTION

- CP.* The Effect of Electrical Grounding Systems on Underground Corrosion and Cathodic Protection. B. Husock, Harco Corp.
- CP.* Trends in Ground Bed Design for Cathodic Protection of Underground Structures. A. P. Landry and I. N. Howell, Jr., Southern Bell Telephone and Telegraph Co.
- CP.* Cathodic Protection Applications at the Hanford Works. C. S. Bucholz, General Electric Co.

MON. (Continued)

10:00 A.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
R. Mayer, Minneapolis-Honeywell Regulator Co.*Sponsor:*
Electronics Committee

10:00 A.M.

HOTEL STATLER
SKYTOP*Chairman:*
A. B. Covey, American Tel. & Tel. Co.*Sponsor:*
TV & Aural Broadcasting Systems Committee

10:00 A.M.

HIT'L GOV. CLINTON
GOVERNOR ROOM*Chairman:*
A. E. Frost, Western Union Telegraph Co.*Sponsor:*
Data Communication Committee

10:00 A.M.

HOTEL McALPIN
RED ROOM*Chairman:*
D. Talley, International Tel. & Tel. Corp.*Sponsor:*
Radio Communication Systems Committee**MODERN CIRCUIT TECHNIQUES—I**

- CP59-260. Transistor External Parameters. A. V. J. Martin, Carnegie Inst. of Technology and H. Schreiber, Paris University.
- CP.* Considerations for the Design of High-Gain, Low-Drift, Transistor Direct-Coupled Amplifiers. J. Kline, University of Rhode Island.
- CP.* A Low-Level Application of the Drift-Transistor. J. A. Forbes, Minneapolis-Honeywell Regulator Co.
- CP.* A Transistor Trigger Circuit Exhibiting An Accurately Defined Triggering Threshold. F. S. Goulding and L. B. Robinson, Atomic Energy of Canada, Ltd.
- CP59-257. A Proportional Transistor Switching Circuit. A. N. Desautels, Minneapolis-Honeywell Regulator Co.

EDUCATIONAL T.V.

- 59-194. A Design for Using Closed-Circuit Television in Education. I F. E. Almstead, New York State Education Dept.
- 59-229. A Talk-Back System for Educational Television. R. C. Norton, I and J. B. Davidson, New York Telephone Co.
- CP59-200. A Transmission Design For Closed Circuit Educational Television. W. L. Wall, New York Telephone Co.
- CP.* Progress in Educational Television. C. M. Braum, Joint Council on Educational T.V.

DATA COMMUNICATIONS

- 58-1181. Optimum Block Length for Data Transmission With Error I Checking. F. B. Wood International Business Machines Corp.
- 58-300. Synchronized Clocks for Data Transmission. J. O. Edson, I M. A. Flavin and A. D. Perry, Bell Telephone Laboratories (Re-presented for discussion only)
- CP.* Sync Recovery for Data Transmission. F. H. Shepard, Jr.

RADIO COMMUNICATION SYSTEMS

- CP.* ABC's of PCM. J. Cohn, Motorola.
- CP.* UHF Exciter for Single Sideband. S. Kitces, Westinghouse Electric Corp.
- CP.* Automatic VHF Telecommunications for Oil Operations in Central Sumatra. V. J. Nexon, MSI Communications Consulting Engineers.
- 59-61. Synchronous Methods of Operation for Private Telegraph Networks. B. S. Diamond, Madison, N. J.
- 58-989. Systems Engineering of Personal Radio Signaling System. I W. Strack, Bell Tel. Labs. (Re-presented for Discussion only)

MON. (Continued)

10:00 A.M.

HOTEL STATLER
GOLD BALLROOM

Chairman:

H. E. Vann, U. S.
Atomic Energy
Commission

Sponsor:

Nucleonics and Power
Generation Commit-
tees

10:00 A.M.

H'T'L GOV. CLINTON
CHELSEA ROOM

Chairman:

R. Lee, Westinghouse
Electric Corp.

Sponsor:

Electronics Committee

10:00 A.M.

ENG. SOC. BLDG.
ROOM 502

Chairman:

J. A. Mason, Warner
Electric Brake and
Clutch Co.

Sponsor:

Rotating Machinery
Committee

NUCLEAR POWER PLANTS—I

58-1199. Electrical and Control Features of the Shippingport Atomic
III Power Station. H. G. Frus, H. A. Thompson, H. A. Van Was-
sen and E. J. Woolever, Duquesne Light Co.

CP.* Operating Experience on Vallecitos Boiling Water Reactor.
L. Kornblith, General Electric Co. and W. Raymond, Pacific
Gas and Electric Co.

58-1273. Performance of the Sodium Reactor Experiment. J. E.
I Owens, W. T. Morgan and L. E. Glasgow, Atomics Interna-
tional.

CP.* Design Problems and Operating Experience on the APPR-1.
K. Kasschau, ALCO Products, Inc.

ELECTRONICS TRANSFORMERS—I

CP59-146. Active Network Equivalent Circuits for the Transformer.
J. R. Alder, University of California.

CP59-9. Small Current-Limiting Power Transformers. H. L. Garba-
rino, Magnaflux Corp. and L. J. Stratton, Jack and Heintz,
Inc.

59-148. Design of a Vertical Magnetic Recording Head With Large
I Scale Models. J. T. Smith, IBM Corp.

ROTATING MACHINERY

CP.* Basic Considerations for Ratings and Performance of Eddy
Current Couplings. W. J. Cheronis, Harnischfeger Corp. and
E. H. Frederick, Dynamatic Div. of Eaton Mfg. Co.

CP59-123. Performance of Electrically Operated Magnetic Particle
Couplings. J. S. Barrett, Vickers Inc.

CP.* Performance of Disc Type Friction Clutches in Oil. W. C.
Pierce, Warner Electric Brake & Clutch Co.

58-1158. Polyphase Induction Motors With Unbalanced Rotor Con-
III nections. B. N. Garudachar and N. L. Schmitz, University of
Wisconsin.

MON. (Continued)

2:00 P.M.

HOTEL STATLER
BALLROOM

Chairman:

R. T. Weil, Jr., Chair-
man 1959 Winter
General Meeting

GENERAL SESSION

ADDRESS: President L. F. Hickernell.

**PRESENTATION OF THE INSTITUTE PRIZE PAPER
AWARDS by the President and W. R. Harris, Chairman,
Prize Awards Committee.**

Communication Division

1st Prize Paper by: M. B. McDavitt.
2nd Prize Paper by: W. W. Peterson.

General Applications Division

1st Prize Paper by: L. V. Boffi and V. B. Haas.

Power Division

1st Prize Paper by: L. H. Fink and J. J. Smerke, II.
2nd Prize Paper by: W. K. Sonnemann, C. L. Wagner and G. D.
Rockefeller.

Science and Electronics Division

1st Prize Paper by: P. W. Kitchin and O. S. Pratt.
2nd Prize Paper by: I. K. Dortort.
3rd Prize Paper by: Herbert Helleman.
4th Prize Paper by: E. A. Sack.

Instrumentation Division

1st Prize Paper by: F. A. Fisher.
2nd Prize Paper by: E. E. Lynch and D. P. Warte.

Industry Division

1st Prize Paper by: H. P. Fullerton and J. Teno.
2nd Prize Paper by: I. K. Dortort.
3rd Prize Paper by: A. Schmidt.

ELECTRICAL ENGINEERING Articles

1st Prize: E. W. Engstrom.

Student Division

1st Prize Paper by: C. Macdonald.
2nd Prize Paper by: D. B. Ulm and M. Hurlbut.

**PRESENTATION OF THE MEDAL IN ELECTRICAL EN-
GINEERING EDUCATION TO DR. JOHN F. CALVERT.**

History of the Education Medal. Wm. R. Brownlee, Chairman,
Recognition Awards Committee.

Career of the Medalist. Dr. Arthur B. Bronwell, President,
Worcester Polytechnic Institute.

Presentation of the Medal and Certificate. President L. F. Hick-
ernell.

Response of the Medalist, Professor John F. Calvert, Head,
Electrical Engineering Department, University of Pittsburgh.

**PRESENTATION OF THE ALFRED NOBLE PRIZE PAPER
AWARD TO CHAFFAR FARMAN-FARMAIAN by Francis
S. Friel, President, American Society of Civil Engineers.**

**PRESENTATION (POSTHUMOUSLY) OF THE EDISON
MEDAL TO DR. CHARLES F. KETTERING by Elgin B.
Robertson, Chairman, Edison Medal Committee.**

**REPORT OF THE NOMINATING COMMITTEE by the
Chairman.**

**SCIENCE AND PUBLIC POLICY. J. R. Killian, Chairman
of the Corporation, MIT, and Chairman of the Presi-
dent's Science Advisory Committee.**

TUESDAY—Feb. 3

9:00 A.M.

HOTEL STATLER
BALLROOM**Chairman:**E. L. Kanouse, Dept. of
Water and Power,
City of Los Angeles**Sponsor:**Transmission and Distri-
bution Committee**SYMPOSIUM ON CONDUCTOR VIBRATION**

- 59-105. A Mobile Vibration Laboratory Unit for Monitoring Dynamic Characteristics of Overhead Transmission Lines—Dynalab, J. R. Ruhlman, J. C. Poffenberger and S. Grosshandler, Performed Line Products Co.
- 59-209. Progress Towards Optimum Damping of Transmission Conductors. J. E. Sproule and A. T. Edwards, Hydro-Electric Power Commission of Ontario.
- CP59-178. Improved Systems for Recording Conductor Vibration. C. B. Rawlins and J. R. Harvey, Aluminum Company of America.
- 59-208. Aeolian Vibration Tests on the 345 KV Muskingum-Tidd Line. III E. S. Zobel, American Electric Power Service Corp.; A. N. Shealy and F. W. DeMoney, Kaiser Aluminum and Chemical Corp.; R. R. Ruegamer, University of Wisconsin.
- 59-90. Automatic Electronic Control of Vibration Tests. R. A. Schomburg, The Martin Co. and F. J. Trebby, Kaiser Aluminum and Chemical Corp.
- 59-96. Transmission Conductor Vibration Tests. M. B. Elton, Bonneville Power Administration. A. R. Hard, Washington State College; A. N. Shealy, Kaiser Aluminum and Chemical Corp.

9:00 A.M.

HOTEL McALPIN
BALLROOM**Chairman:**C. W. Miller, Westing-
house Electric Corp.**Sponsor:**

Transformers Committee

TRANSFORMERS

- 59-35. Equivalent Circuits for Overcurrent Calculations of Current Transformers. E. E. Conner and T. R. Specht, Westinghouse Electric Corp.
- CP-59-242. The Presentation of Transformer Theory. T. H. Barton, McGill University.
- 58-936. Natural Frequencies in Power Transformer Windings. I. Johansen, Massachusetts Institute of Technology.
- 58-1325. Computers Change Transformer Design Philosophy. H. J. Weber and G. Gallousis, Allis-Chalmers Mfg. Co.

9:00 A.M.

HOTEL McALPIN
COLONIAL ROOM**Chairman:**A. G. Conrad, Yale
University**Sponsor:**Rotating Machinery
Committee**ROTATING MACHINERY**

- CP59-131. Synthesis of Induction Motor Designs on a Digital Computer. C. G. Veinott, Reliance Electric and Engineering Co.
- 59-57. Optimum Machine Design by Digital Computer. G. L. Godwin, Westinghouse Electric Corp.
- CP59-133. Motor Speed-Torque Curves by Digital Computers. J. M. Shulman, Westinghouse Electric Corp.

TUES. (Continued)

9:00 A.M.

HOTEL McALPIN
RED ROOM**Chairman:**C. Kagan, Western Elec-
tric Co.**Sponsor:**Computing Devices and
Feedback Control Sys-
tems Committees

9:00 A.M.

HOTEL STATLER
GEORGIAN ROOM**Chairman:**E. L. Brancato, U. S.
Naval Research Lab-
oratory**Sponsor:**Electrical Insulation
Committee

9:00 A.M.

H'T'L GOV. CLINTON
CHELSEA ROOM**Chairman:**D. F. Winter, Moloney
Electric Co.**Sponsor:**

Electronics Committee

CASE HISTORIES OF COMPUTERS IN AUTOMATIC CONTROL

- CP59-230. The Closed-Loop Concept of Real Time Flight Analysis. G. Hintze, White Sands Missile Range.
- CP.* Heat Rate Computer Involving Digital and Analog Multiplexing Controls. G. Jacobi, General Electric Co.
- CP.* Application of Logic Techniques to a Steel Mill. W. D. Rowe, F. G. Willard and F. Dinicolantonio, Westinghouse Electric Corp.
- CP.* Computer Control of a Butane Isomerization Process. T. Stout, Ramo Woolridge Corp.

ELECTRICAL INSULATION

- CP.* High Temperature Radiation Resistance of Several Silicon Insulation Systems. C. G. Currin and F. A. Smith, Dow Corning Corp.
- CP59-134. The Effects of Nuclear Radiation on the Dielectric Strength of Air. G. I. Duncan, J. C. Fraser and B. Valachovic, General Electric Co.
- CP.* The Interconversion of Radiological Units. C. H. Cheek, Naval Research Lab.
- 59-117. Effects of Gamma Radiation at 25C on Silicone Dielectrics. I C. G. Currin, Dow Corning Corp. (Re-presented for Discussion only)
- 58-878. Effects of Neutron and Gamma-Ray Irradiation on the Dielectric Constant and Loss Tangent of Some Plastic Materials. III R. A. Weeks, D. Binder, Oak Ridge National Lab. (Re-presented for Discussion only)

ELECTRONICS TRANSFORMERS—II

- CP59-119. Specifying a Pulse Transformer for Computer Use. R. R. Blessing, International Business Machines Corp.
- CP59-120. Electronics Transformer Design by Digital Computers. L. F. Deise, W. Etchison and R. Lee, Westinghouse Electric Corp.
- CP.* Design of Electronic Power Transformers by Digital Computers. G. Walters, General Electric Co.
- 59-48. Digital Computer Design of Pulse Transformers. I P. E. Lego, R. L. Greene and J. M. Banic, Westinghouse Electric Corp.

TUES. (Continued)

9:00 A.M.

H'T'L GOV. CLINTON
GREELEY ROOM*Chairman:*
W. C. Dunlap, Raytheon
Mfg. Co.*Sponsor:*
Basic Sciences and Solid
State Devices Com-
mittees

9:00 A.M.

HOTEL STATLER
TERRACE ROOM*Chairman:*
J. W. St. Andre, Kaiser
Aluminum and Chemi-
cal Corp.*Sponsor:*
Industrial and Commer-
cial Power Sys-
tems Committee

9:00 A.M.

HOTEL STATLER
WEST ROOM*Chairman:*
H. W. Bibber, Union
College*Sponsor:*
Professional Conduct
and Registration of
Engineers Committees

9:00 A.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
H. F. Caley, Western
Union Telegraph Co.*Sponsor:*
Data Communication
Committee**POWER SOURCES FOR SATELLITES**

- CP.* New Developments in Solar Batteries. M. Wolf, Hoffman Semiconductor Div.
- CP.* Fuel Cells. D. Douglas, General Electric Labs.
- CP.* Considerations Concerning Power Sources for Satellites. J. Leisenring, General Electric Co.
- CP.* Parameter Measurements for Thermoelectric Generators. C. S. Duncan and S. J. Angello, Westinghouse Research Laboratories.

INDUSTRIAL & COMMERCIAL POWER SYSTEMS*The price of S-108 is \$1.00 per copy.*

- S-108. Electrical Safety—Everybody's Problem. J. W. St. Andre, Kaiser Aluminum and Chemical Corp.
- S-108. Designing Industrial Electric Systems for Safety. R. H. Kaufman, General Electric Co.
- S-108. Designing Industrial Power Distribution Equipment With Safety In Mind. P. L. Camp, I-T-E Circuit Breaker.
- S-108. Lockout and Tag Procedure In An Industrial Plant Power System. C. E. Wilson of Bethlehem Steel Co.
- S-108. Safety Precautions On A Plant Electrical System. W. H. Brady, E. I. DuPont De Nemours and Co., Inc.

RECOGNITION IN A PROFESSION

- CP.* Professional Registration. N. L. Freeman, N. Y. State Education Dept.
- CP.* Engineering as a Profession. Reverend J. T. Tinnelly, C.M., St. John's University.

DATA COMMUNICATIONS

- 58-1240. Assessment of Effects of Delay Distortion in Data Systems. I A. D. Fowler and R. A. Gibby, Bell Telephone Labs.
- 58-1241. Measurement of Narrow Band Noise on Telephone Facilities in Connection With Analog Data. J. O. Edson, F. E. Froelich and R. K. Townley, Bell Telephone Labs.
- 59-107. Application of Telegraph Techniques in Data Transmission. I A. Boggs and J. E. Boughtwood, Western Union Tel. Co.
- 58-1204. An FM Digital Subset for Data Transmission. L. A. Weber, I Bell Telephone Labs. (Re-presented for Discussion only)

TUES. (Continued)

9:00 A.M.

HOTEL STATLER
EAST ROOM*Chairman:*
D. Talley, International
Tel. & Tel. Corp.*Sponsor:*
Radio Communication
Systems Committee

9:00 A.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
R. N. Wagner, Alumi-
num Co. of America.*Sponsor:*
Chemical Industry and
Industrial Power Rec-
tifiers Committees

9:00 A.M.

HOTEL STATLER
SKYTOP*Chairman:*
H. L. McDowell, Bell Tele-
phone Laboratories*Sponsor:*
Electronics Committee

9:00 A.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
C. L. Wagner, Westing-
house Electric Corp.*Sponsor:*
Nucleonics and Power
Generation Commit-
tees**RADIO COMMUNICATIONS**

- 59-86. Tests Conducted Over High Reflective Terrain At 4,000, 6,000 I and 11,000 Megacycles. A. G. Oxehufwud, American Tel. & Tel. Co.
- 58-1236. Radio Attenuation at 11 KMC and Some Implications Af- I fecting Relay System Engineering. S. D. Hathaway and H. W. Evans, Bell Telephone Labs.
- 59-6. The CCITT Multichannel Radio Relays and White Noise. I C. A. Parry, Page Communications Engineers, Inc.
- 59-87. The Design of the Corner Reflector Antenna. H. P. Neff, Jr. I and J. D. Tillman, University of Tennessee.
- CP59-88. The MLD-4 Microwave Relay System. J. J. Lenehan, The Western Union Telegraph Co.

**SYMPOSIUM ON TODAY'S APPLICATION CONSIDERATIONS—
MERCURY, MECHANICAL AND SEMI-CONDUCTOR
POWER RECTIFIERS**

R. N. Wagner, Chairman.

TRAVELLING WAVES TUBE DEVELOPMENT

- CP.* Periodically Focused Travelling-Wave Tubes for Operation Under Extreme Environmental Conditions. E. E. Bliss,
- CP.* Design for Travelling-Wave Tubes for Airborne Applications. M. Nowogrodzki,
- CP.* A New Backward Wave Oscillator for the 4 to 5 Millimeter Region. J. A. Noland and L. D. Cohen, Sylvania Electric Products, Inc.
- CP.* The RCA-7111—A Very High-Performance Tunable Magne- tron. V. J. Stein
- CP.* Long-Life Characteristics of Travelling-Wave Tubes and Mag- netrons. E. W. Kinaman and R. W. Kissinger.

NUCLEAR POWER PLANTS—II

- 58-1289. Electrical Features of the Yankee Atomic Electric Plant. III E. T. Witt, Stone and Webster; C. F. Obermesser, Westing- house Electric Corp.; R. E. Minkwitz, New England Power Service Co.
- 58-1194. Electrical Features of Indian Point Nuclear Electric Gener- III ating Station. T. D. Reimers, Consolidated Edison Co. of N. Y., Inc.
- 58-1219. A Look at the Electrical Features—Dresden Nuclear Power III Station. W. J. Shewski, Commonwealth Edison Co.
- 58-1272. Organic Moderated Reactors for Central Station Power. W. II E. Parkins and E. F. Weisner, Atomics International.

TUES. (Continued)

9:00 A.M.

ENG. SOC. BLDG.
AUDITORIUM*Chairman:*
C. R. Kraus, The Bell
Telephone Co. of Pa.*Sponsor:*
TV & Aural Broadcast-
ing Systems Commit-
tee

9:00 A.M.

ENG. SOC. BLDG.
ROOM 502*Chairman:*
L. D. Wechsler, General
Electric Co.*Sponsor:*
Electronics Committee

9:30 A.M.

HOTEL STATLER
PENN TOP NORTH

2:00 P.M.

HOTEL STATLER
BALLROOM*Chairman:*
J. A. Rawls, Virginia
Electric and Pow. Co.*Sponsor:*
Transmission and Distri-
bution Committee**TASO REPORT AND STEREO HI-FI**

- CP.* Taso Report by Dr. G. R. Town, Iowa State College.
- CP.* The Development of a High Quality Stereophonic Pickup. W. O. Stanton, Pickering & Co. (Stereophonic Demonstration).
- CP.* Ampex Demonstration. J. Miller, Ampex Corp.
- CP.* The Design of a Mechanism to Handle Magnetic Tape in a Cartridge. A. D. Burt and D. R. Andrews, Radio Corp. of America (Stereophonic Demonstration).

MODERN CIRCUIT TECHNIQUES—II

- CP.* Thyristor Monostable Rectangular and Sawtooth Pulse Generators. R. W. Ahrons and C. A. Von Urff, Radio Corp. of America.
- CP.* High Capacity Reversible Magnetic Counter For Real Time Systems. E. A. Fisch, B. Silverman and E. P. Stabler, General Electric Co.
- CP.* Design and Analysis of the Bi-Logical Computer Element. A. Lemack, Sylvania Electric Products, Inc.
- CP.* On the Design of Fractional Microsecond Magnetic Memories. J. E. Thomas, Sylvania Electronic Systems.
- CP.* Time-Base Computation Techniques. H. W. Abbott and V. P. Mathis, General Electric Co.

SECTION REPRESENTATIVES CONFERENCE**SYMPOSIUM ON WOOD VS. STEEL FOR EHV TRANSMISSION LINES**

- CP.* Composite Poles for Extra High Voltage Wood Structures. W. A. Schultz and J. E. McKinster, Public Service Co. of Indiana, Inc.; L. T. Williams, Southwestern Electric Power Co.
- CP.* Wood Structures for 345 kv Transmission Construction. R. G. Yerck, Hughes Bros., Inc.
- CP.* The Use of Wood for 345 kv Transmission Construction. L. H. J. Cook, The British Columbia Electric Co., Ltd.
- 59-67. The British Columbia Electric Company's 360 kv and 230 kv III Transmission Line Designs. L. H. J. Cook, The British Columbia Electric Co., Ltd.
- CP.* The Place of Steel and Wood for High Voltage Transmission Lines. A. V. Price, Ebasco Services, Inc.
- 59-106. Steel Towers for the Extra-High Voltage System of the Bonneville Power Administration. F. W. Farr, Bonneville Power Administration.

TUES. (Continued)

2:00 P.M.

HOTEL McALPIN
BALLROOM*Chairman:*
D. L. Levine, Common-
wealth Edison Co.*Sponsor:*
Transformers Committee

2:00 P.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
C. G. Veinott, Reliance
Electric and Engineer-
ing Co.*Sponsor:*
Rotating Machinery
Committee

2:00 P.M.

HOTEL McALPIN
RED ROOM*Chairman:*
L. Braun, Jr., Polytech-
nic Inst. of Brooklyn*Sponsor:*
Feedback Control Sys-
tems and Computing
Devices Committees**TRANSFORMERS**

- CP.* Accelerated Aging Characteristics of Formex and Paper-Insulated Wire in Transformer Oil. M. F. Beavers, H. H. Brustle, I. H. Carpenter and W. J. Degnan, General Electric Co.
- CP.* Report on Test Procedures for Thermal Evaluation of Oil-Immersed Transformers. AIEE Sub-Group on Thermal Evaluation of Oil-Immersed Transformers of the Insulation Life Committee of AIEE Transformer Committee. A. M. Lockie—Chairman.
- 59-43. Inner Cooled Shell Form Power Transformers. W. D. Albright III and H. R. Moore, Westinghouse Electric Corp.
- 58-1150. The Relationship Between Operating Voltage and the Standard Dielectric Tests for Power and Distribution Transformers. AIEE Committee Report, H. H. Wagner, Chairman.

ROTATING MACHINERY

- 59-122. The Application of Digital Computers to Rotating Machine III Design. G. W. Herzog, O. W. Andersen, J. Scrimgeour and W. S. Chow, Canadian General Electric Co., Ltd.
- 59-54. The Analysis of Sudden-Short-Circuit Oscillograms of Steam III Turbine Generators. D. Harrington and J. I. Whittlesey, General Electric Co.
- 59-40. Theory of End-Winding Leakage Reactance. V. B. Honsinger, III Allis-Chalmers Mfg. Co.
- 59-39. Measurement of End-Winding Leakage Reactance. V. B. Honsinger, III Allis-Chalmers Mfg. Co.
- 59-11. Constant Excitation Current-Locus Diagrams of Saturated Salient-Pole Synchronous Machines. S. A. Nasar, Ahsanullah Engineering College.

ADAPTIVE CONTROL SYSTEMS

- CP.* Use of Mathematical Error Criteria in the Design of Adaptive Control Systems. C. Merriam, III, Massachusetts Institute of Technology.
- CP.* Control By Stochastic Adjustment. J. E. Bertram, IBM Corp.
- CP.* Is This An Adaptive System? G. F. Franklin, Stanford University.
- CP.* Executive-Controlled Adaptive Systems. R. Staffin, Polytechnic Institute of Brooklyn.

TUES. (Continued)

2:00 P.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
R. E. Plump, General
Electric Co.*Sponsor:*
Electrical Insulation
Committee**ELECTRICAL INSULATION**

- 58-1239. Electric Breakdown of Gases and Vapors of Chlorofluorohydrocarbons. C. N. Works and E. W. Lindsay, Westinghouse Electric Corp.
- 59-114. Experience with the AIEE Subcommittee Test for Gaseous Insulation. M. L. Manning, McGraw Edison Co. (Re-presented for Discussion only).
- 59-74. Factors Controlling Electric Strength of Gaseous Insulation. I P. Narbut, D. Berg, C. N. Works, and T. W. Dakin, Westinghouse Electric Corp.
- CP59-258. The Solubility of SF₆, C₂F₆, and N₂ in Transformer Oil. N. Vanderkooi, Allied Chemical Corp.
- CP.* Applications and Research Progress in Gaseous Dielectrics. T. W. Liao, H. G. Pfeiffer and R. E. Plump, General Electric Co.
- CP.* Arc Recovery Strength of Gases At High Current. G. A. Farrell and J. D. Cobine, General Electric Co.

2:00 P.M.

H'T'L GOV. CLINTON
CHELSEA ROOM*Chairman:*
E. A. Lederer, R.C.A.
Corp.*Sponsor:*
Electronics Committee**NEW ELECTRON TUBE DEVELOPMENTS**

- CP.* Development of Switch Tubes for Controlled Fusion Research. D. B. Cummings, University of California.
- CP.* The Effects of Bulb Temperature and Filament Voltage Variations on Subminiature Tube Life. M. W. Edwards, General Electric Co.
- CP.* The Development of a Front-End Tube for Reduced Cross-modulation and Noise. A. A. Jalajas and K. W. Uhler, Radio Corp. of America.
- CP.* A Frame-Grid Audio Pentode for Stereo Output. J. L. McKain and R. E. Schwab, Sylvania Electronic Tubes.

2:00 P.M.

H'T'L GOV. CLINTON
GREELEY ROOM*Chairman:*
A. C. Sheckler, Carrier
Corp.*Sponsor:*
Solid State Devices and
Basic Sciences Com-
mittees**SOLID STATE DEVICES**

- CP.* A Fast Thermoelectric Measuring Device. P. Klein, General Electric Co.
- CP.* Parametric Devices—Solid State Breaks the Microwave Barrier. W. R. Beam, Radio Corp. of America.
- 59-69. Remotely Controlled Electroluminescent Totaling Display. I R. C. Lyman, C. I. Jones and A. Leger, Westinghouse Electric Corp.
- CP.* Exact and Approximate Methods for Calculating Thermoelectric Efficiencies. B. Sherman, R. R. Heikes and R. W. Ure, Westinghouse Research Laboratories.

TUES. (Continued)

2:00 P.M.

HOTEL STATLER
TERRACE ROOM*Chairman:*
N. Peach, "Power," Mc-
Graw-Hill Publishing
Co.*Sponsor:*
Industrial and Commer-
cial Power Systems
Committee

2:00 P.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
A. W. Jacobson, The
Bristol Co.*Sponsor:*
Recording and Control-
ling Instrumentation
Committee

2:00 P.M.

HOTEL STATLER
PENN TOP NORTH

2:00 P.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
H. E. Jensen, C & D
Batteries, Inc.*Sponsor:*
Chemical Industry Com-
mittee

2:00 P.M.

HOTEL STATLER
SKYTOP*Chairman:*
A. P. Stern, General
Electric Co.*Sponsor:*
Electronics Committee**INDUSTRIAL AND COMMERCIAL POWER SYSTEMS**

- CP59-7. Electrical Maintenance of a Large Chemical Plant. W. A. Reece, The Dow Chemical Co.
- CP59-244. Education and Maintenance in the Operation of Industrial Power Systems. W. A. Weddendorf, Mutual Boiler & Machinery Insurance Co.
- CP59-19. Preventive Maintenance on Industrial Switchgear, Transformers and Cables. D. B. Kiefer, Bakelite Co.
- CP.* Designing and Selling to Management a Power Distribution System With Maintenance In Mind. R. Felch, Owens-Corning Fiberglass Corp.
- CP.* Role of Modern Switchgear in Preventing and Coping With Operating Emergencies. W. P. Burt and W. A. Fleischli, General Electric Co.

RECORDING AND CONTROLLING INSTRUMENTATION

- CP59-156. Interchangeable Errors in Instrument Systems. G. M. Anderson, Thomas A. Edison Industries.
- CP59-160. A Transistor Oscillator Limit Switch for Indicating and Recording Instruments. J. T. Wintermute and S. G. Hayter, Westinghouse Electric Corp.
- 59-157. A Magnetic Amplifier Flow Controller. H. E. Darling, The Foxboro Company.

SECTION REPRESENTATIVES CONFERENCE**BATTERIES**

- CP.* Recharge Characteristics of Lead Acid Batteries. R. C. Shair, Bell Telephone Labs., Inc.
- CP.* Storage Batteries; Farads, Milliohms and Microhenries. E. Willihnganz, C. & D. Batteries, Inc.

MODERN CIRCUIT TECHNIQUES—III

- CP.* Circuit Reliability Versus System Reliability in Transistor Switching Circuits—A Survey. J. J. Suran, General Electric Co.
- CP59-261. Back-Transient Diode Logic. G. Wolff, Univ. of Denver.
- CP.* Controlled-Current Transistor Logic. E. Powers & M. Rubinnoff, Philco Corp.
- CP.* SCTL—A Reliable Version of Transistor Logic Circuitry. W. E. Slusher and R. L. Jones, Transitron Electronic Corp.
- CP.* Complementary Transistor Resistor Logic. G. D. Bruce and M. J. Flynn, International Business Machines Corp.
- CP.* Fundamental Considerations Of Power Dissipation Limits In Transistor Pulse Circuits. H. Raillard, General Electric Co.

TUES. (Continued)

2:00 P.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
A. G. Mellor, General
Electric Co.*Sponsor:*
Nucleonics and Power
Generation Commit-
tees2:00 P.M.
ENG. SOC. BLDG.
AUDITORIUM*Chairman:*
P. C. Goldmark, Colum-
bia Broadcasting Sys-
tem*Sponsor:*
TV & Aural Broadcast-
ing Systems Commit-
tee

2:00 P.M.

HOTEL STATLER
EAST ROOM*Chairman:*
P. T. Sproul, Bell Tele-
phone Labs.*Sponsor:*
Radio Communication
Systems Committee

2:00 P.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
G. D. Lobingier, West-
inghouse Elec. Corp.*Sponsor:*
Education Committee**NUCLEAR POWER PLANTS—III**58-531. Electrical Engineering Aspects of the Enrico Fermi Atomic
III Power Plant. R. H. Logue, Power Reactor Development Co.
(Re-presented for Discussion only)CP.* Horizontal Pressure Tube Nuclear Reactor—Canadian Ap-
proach to Minimum Fuel Cost Using Natural Uranium. V. V.
Mason and S. M. Jones, Canadian Westinghouse, Ltd.58-1299. Auxiliary Power System for Nuclear Plants. R. E. Frick,
III Gilbert Associates, Inc.CP58-1300. Training Simulator for Nuclear Power Plant Reactor Op-
erators. N. E. Bush, Westinghouse Electric Corp.**VIDEO TAPE FACILITIES AND T.V. ANTENNAS**

CP.* Burbank Video Tape Facilities. R. Byloff, NBC.

CP.* CBS New York Video Tape Installation. K. B. Benson, CBS.

CP.* Video Automatic Gain Control. D. Taylor, RCA.

CP.* Traveling Wave Antenna. M. Siukola, RCA.

RADIO COMMUNICATIONS SYSTEMS58-1293. Public Air-Ground Telephone Service Trial. L. M. Augustus,
I Michigan Bell Tel. Co.58-1292. Dial Telephone Service for Smith Island—An Isolated Com-
I munity in the Chesapeake Bay. M. E. Littleton, The Ches-
apeake & Potomac Telephone Co. of Maryland.58-1227. Expansion of Pacific Coast Microwave Network. R. G. Kuck,
I Pacific Telephone & Telegraph Co.CP59-83. Optimum Design Considerations for Radio Relays Utilizing
the Tropospheric Scatter Mode of Propagation. C. A. Parry,
Page Communications Engineers, Inc.**THE MOTIVATION MULTIPLIER IN ELECTRICAL
ENGINEERING EDUCATION**CP.* The Profile of an Engineer. G. D. Lobingier, Westinghouse
Electric Corp.CP.* Techniques for Motivating Students. S. R. Warren, Jr., Univ.
of Pennsylvania and B. R. Teare, Carnegie Institute of Tech-
nology.CP.* Motivation Through Challenge. W. C. Johnson and P. R.
Clement, Princeton Univ.CP.* Opportunity and Responsibility as Motivators for Engineers.
W. G. Amey, Leeds & Northrup Co.CP.* 1200 Case Studies of Engineering Motivation. G. E. Moore,
Westinghouse Electric Corp.

2:00 P.M.

HOTEL STATLER
WEST ROOM*Chairman:*
L. O. Dorfman, Sander-
son & Porter Engineers*Sponsor:*
Rotating Machinery
Committee**WEDNESDAY—Feb. 4**

9:00 A.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
I. B. Johnson, General
Electric Co.*Sponsor:*
Transmission and Distri-
bution Committee

9:00 A.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
E. W. Kenefake, Gener-
al Electric Co.*Sponsor:*
Power System Communi-
cations Committee

9:00 A.M.

HOTEL STATLER
PENN TOP NORTH*Chairman:*
M. R. Lory, Westing-
house Electric Corp.*Sponsor:*
Rotating Machinery
Committee**ROTATING MACHINERY**58-1304. A Technique of Measuring the Amplitude and Harmonic
III Content of Surge Voltages in Machine Windings During
Switching. F. A. Scheda, Westinghouse Electric Corp.CP59-139. A Surge Generator For Simulating Switching Transients
in Induction Motors. F. A. Scheda, Westinghouse Electric
Corp.CP58-1310. Tests and Life Expectancy of Generator Windings. V. S.
McFarlin, Boston Edison Co.59-137. Switching Transients in Single Phase Induction Motors With
III Speed Constant. P. Venkata Rao, Indian Institute of Science.CP59-138. Rotor Impedance Control of the Wound-Rotor Induction
Motor. W. Shepherd and G. R. Slemmon, University of Toronto.**TRANSMISSION AND DISTRIBUTION**59-80. A Correlation of the Present with a Proposed Standard Meth-
III od for RIV Measurements on High Voltage Devices. C. J.
Miller, Jr., The Ohio Brass Co.59-79. Development of a Square Law Radio Noise Meter—I. F. J.
III Trebby, Kaiser Aluminum and Chemical Corp.59-94. The Effect of Rain on R.I.V. Characteristics of High Voltage
III Suspension Assemblies. J. Kaminski, B. E. Kingsbury and
F. C. Vose, General Electric Co.CP.* Determination of Lightning Response of Transmission Lines
By Means of Geometrical Models. F. A. Fisher, J. H. Hagen-
guth and J. G. Anderson, General Electric Co.CP.* Response of a 345 KV Transmission Tower to a Simulated
Lightning Stroke. H. R. Armstrong, Detroit Edison Co.; L. O.
Barthold and A. J. Schultz, General Electric Co.**POWER SYSTEM COMMUNICATIONS**58-1228. Experience With Broad-Band Carrier Coupling. H. I. Dob-
III son, Tennessee Valley Authority.59-51. Practical Computation of Single-Frequency Coupling Losses
III for Representative Field Conditions. H. J. Fiedler, F. C.
Krings and D. L. Willer, General Electric Co.59-59. A Loop Microwave System Design. R. H. Davis, Motorola, Inc.
III

CP.* A New Look in Microwave. K. Ray, General Electric.

ROTATING MACHINERY59-135. Current Loci of Permanent Magnet Synchronous Motors,
III An Extension of Blondel Theory, J. F. H. Douglas, Marquette
University.59-136. A Novel Type of Smoothly Variable Speed A-C Motor Having
III Widely Adjustable Power Factor Characteristics. P. K.
Charlu, P.S.G. College of Technology.CP55-733. Advancements in Synchronous Motor Control and Protec-
tion. J. Baude, Allis-Chalmers Mfg. Co.59-112. Differential Leakage of Three Phase Windings With Conse-
III quent Pole Connection. C. H. Lee, Westinghouse Electric
Corp.

WED. (Continued)

9:00 A.M.

HOTEL STATLER
WEST ROOM*Chairman:*
A. F. Mentinck, General
Electric Co.*Sponsor:*
Computing Devices and
Nucleonics Commit-
tees

9:00 A.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
L. J. Berberich, West-
inghouse Elec. Corp.*Sponsor:*
Electrical Insulation
Committee

9:00 A.M.

HOTEL STATLER
EAST ROOM*Chairman:*
H. N. Price, General
Electric Co.*Sponsor:*
Electronics Committee

9:00 A.M.

HOTEL STATLER
SKYTOP*Chairman:*
D. W. Rowten, West-
inghouse Elec. Corp.*Sponsor:*
Production and Appli-
cation of Light Com-
mittee**COMPUTERS IN NUCLEAR SYSTEMS**

- 58-1314. Digital Calculation of Transient Performance of the Primary I Coolant System in A Water Reactor. D. G. Lewis, General Electric Co.
- 58-1315. Computational and Experimental Techniques in Nuclear Reactor Design. W. F. Witzig, M. R. Stuart and L. O. Herwig, Westinghouse Electric Corp.
- CP.* Present Status of Analog Representations of Nuclear Power Systems. J. M. Gallagher, Westinghouse Electric Corp.
- CP58-1316. Engineering Description of a Water-Moderated Flexible Critical Facility Using Metal Fuel. E. S. Lembersky, Westinghouse Electric Corp.
- CP.* Shielding Computer Program. J. T. Martin and J. P. Yalch, General Electric Co.

ELECTRICAL INSULATION

- 58-1205. Thermal Life of Enameled Magnet Wire. Electrical Insulation Committee Working Group Report, J. F. Dexter, Chairman.
- CP59-116. Study of Thermal Deterioration of Kraft Pulps Using a Mass Spectrometer. Y. Saito and T. Hino, Tokyo Institute of Technology.
- CP59-115. The Aging of Organic Varnish Films Upon Iron Surfaces. R. W. Nye, Minnesota Mining and Manufacturing Co.
- CP.* Comparison of Test Procedures for the Thermal Life Testing of Varnished Glass Cloth. C. J. Straka, E. W. Lindsay, G. W. Hewitt and T. W. Dakin, Westinghouse Electric Corp.
- CP.* Fluidized Coating—A Method of Slot Insulation. R. H. Thielking and D. L. McClenahan, Schenectady Varnish Co.

CERAMIC TUBE DEVELOPMENTS

- CP.* A New Ceramic Triode for VHF Applications. J. D. Campbell, General Electric Co.
- CP.* The 1802-A Ceramic-Metal Envelope Hydrogen Thyatron. D. F. Riley, Edgerton, Germeshansen & Grier, Inc.
- CP.* Color Photomicrographic Examination of Electron Tubes. E. W. Scott, General Electric Co.
- CP.* Stacked-Mount Vacuum Tubes with a Choice of Glass or Ceramic Envelopes. C. F. Douglas, Sylvania Electronic Products, Inc.

PRODUCTION AND APPLICATION OF LIGHT

- CP.* A Progress Report of the Latest Developments in Equipment and Lighting Techniques. E. A. Lindsay, General Electric Co.
- CP.* Some Aspects of the Problems Concerning Group Replacements of Mercury and Fluorescent Lamps on Streetlighting Systems. R. C. Wey, Ohio Power Co.
- CP.* Luminaire and Light Conditioning Maintenance for Offices and Factories. E. I. Creed, Cleveland, Ohio.

WED. (Continued)

9:00 A.M.

HOTEL STATLER
TERRACE ROOM*Chairman:*
L. F. Kazda, University
of Michigan*Sponsor:*
Feedback Control Sys-
tems Committee

9:00 A.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
C. S. Hague, Westing-
house Electric Corp.*Sponsor:*
Industrial Power Recti-
fiers and Chemical
Industry Committees

9:00 A.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
F. H. Rogers, Baltimore
Gas and Electric Co.*Sponsor:*
Indicating and Integrat-
ing Instruments Com-
mittee

9:00 A.M.

HOTEL STATLER
BALLROOM*Chairman:*
W. G. Dow, University
of Michigan*Sponsor:*
Research and Manage-
ment Committees**NONLINEAR CONTROL SYSTEMS**

- 59-218. A Relay-Type Feedback Control System Designed For Random Inputs. A. M. Hopkin and P. K. C. Wang, University of California.
- 59-147. A Study of Nonlinear Systems With Random Inputs. K. II Chuang and L. F. Kazda, University of Michigan.
- 59-231. A Stability Criterion for Nonlinear Systems. Y. H. Ku and II A. A. Wolf, University of Pennsylvania.
- CP59-232. Describing Function Measurement With An Electronic Analog Computer. V. L. Larowe and M. M. Spencer, University of Michigan.
- 59-233. Limit-Cycle Stability Study of a Feedback Control System By II A New Describing Function Technique. H. J. Harrington, Convair-Astronautics.

INDUSTRIAL POWER RECTIFIERS

- CP.* Report of Field Tests on Aluminum Pot Line Rectifier Systems. C. A. Langlois, Reynolds Metals Co.; V. N. Stewart and R. P. Stratford, General Electric Co.
- CP59-254. Some Improvements in High Speed Circuit Breakers. C. I. Clausing, I-T-E Circuit Breaker Co. and D. I. Bohn, Asheville, N. C.
- CP.* Specification of Rectifiers for Electrolytic Plants From The Users Point of View. W. C. Gardiner, W. J. McCaig and C. F. Ruyon, Olin Mathieson Chemical Corp.
- CP.* Pneumatic Force-Balance System For Measuring Cell Line Currents. H. C. Behrens and B. J. Nankervis, Dow Chemical Co.

INTEGRATING INSTRUMENTS

- 59-167. Statistical Approaches to Selecting Domestic Meters for Test. I L. Dwon and J. A. Morris, American Electric Power Service Corp.
- 59-17. A Single-Stator Meter for Two Phases of 4-Wire Y. E. W. I Schwarz, Sangamo Electric Co.
- 59-168. Polyphase Meter Connections Thirty Years After Woodson. I F. W. Warburton, New England Power Service Co.
- 59-165. The Inductronic R. Electrodynamometer for the Precise Measurement of Voltage, Current, Power Energy. R. F. Estoppey, Daystrom, Inc.
- 59-166. Precision Integrator for D-C Potentials. J. R. Pattee, Daystrom-Weston.

THE ROAD TO SCIENTIFIC SUPREMACY?

- CP.* The Navy and Research Progress. Admiral R. Bennett, Office of Naval Research.
- CP.* The Role of Government Research Laboratories. A. V. Astin, National Bureau of Standards.
- CP.* The Outlook on Science in Canada and England. B. G. Ballard, National Research Council of Canada.
- CP.* The National Academy of Sciences—National Research Council. D. W. Bronk, National Academy of Sciences.

WED. (Continued)

9:00 A.M.

HOTEL McALPIN
BALLROOM*Chairman:*
C. W. Miller, Westing-
house Electric Corp.*Sponsor:*
Transformers Committee

9:00 A.M.

HOTEL McALPIN
RED ROOM*Chairman:*
H. W. Henkels, West-
inghouse Elec. Corp.*Sponsor:*
Solid State Devices and
Semiconductor Metal-
lic Rectifiers Commit-
tees

9:00 A.M.

H'T'L GOV. CLINTON
GREELEY ROOM*Chairman:*
F. W. Smith, Western
Union Telegraph Co.*Sponsor:*
Telegraph Systems Com-
mittee

9:00 A.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
W. K. MacAdam, Am.
Tel. & Tel. Co.*Sponsor:*
Communication Division
and Education Com-
mittee**TRANSFORMERS**

- CP.* Tank Pressures Resulting from Internal Explosions. R. J. Ringlee and N. W. Roberts, General Electric Co.
- CP.* Internal Fault Characteristics of Gas Insulated Transformers. G. Camilli, L. J. Littlejohn and W. A. Wooldridge, General Electric Co.
- CP.* A 10,000 KVA, 69 KV Gas-Insulated Transformer. G. Camilli, General Electric Co.
- CP.* Design, Insulation and Thermal Performance Characteristics of a 7500 KVA Vapor-Cooled Transformer. P. Narbut and A. J. Maslin, Westinghouse Electric Corp.

SEMICONDUCTOR SWITCHING DEVICES—I

- 58-1249. Theory of Transient Build-up In Avalanche Transistors. W. I Shockley and J. Gibbons, Shockley Semiconductor Labs.
- CP58-1359. PNP Switches. J. M. Goldey, Bell Telephone Labs., Inc.
- CP58-1378. Germanium PNP Switches. I. A. Lesk, General Electric Co.
- CP58-1223. High Gain Static A-C Switch. E. A. Petrocelli, Westinghouse Electric Corp.
- 58-1248. A Silicon Controlled Rectifier—Its Characteristics and Ratings—I. D. K. Bisson and R. F. Dyer, General Electric Co.

TELEGRAPH SYSTEMS

- 59-37. Telex in New York. P. R. Easterlin, Western Union Telegraph Co.
- 59-154. Properties of Modern Teleprinters With Regard to Signal I Transmission. H. Wusteny, Siemens and Halske AG.
- 59-8. A Nonsynchronous System for Mobile Record Communications. C. H. Stewart II, Bell and Gossett Co.
- 59-152. Reperforator-Teletypewriter TT-195()/FG. D. F. Frick, I Smith-Corona Marchant, Inc.
- 58-443. The 83B1 Teletypewriter Selective Calling System. C. W. I Smith, American Telephone and Telegraph Co., Retired; C. J. Votaw and A. L. Whitman, Bell Telephone Labs., Inc. (Represented for Discussion only)

TRAINING IN COMMUNICATIONS

- CP58-1235. Industry Schools Its Engineers. C. E. Waldner, New York Telephone Co.
- 58-1152. A New Approach to Training Telephone Engineers. W. C. I Burnett, Southern Bell Telephone and Telegraph Co.; L. C. Adams, Clemson College.
- CP58-1323. Telephone Engineering Management Conference. P. H. Henson, Lincoln Telephone and Telegraph Co.
- CP.* The Evaluation of Engineering Training in Industry. A. L. Charney, Bell Telephone Co. of Pennsylvania.

WED. (Continued)

9:00 A.M.

H'T'L GOV. CLINTON
CHELSEA ROOM*Chairman:*
J. S. Askey, Elliott Co.*Sponsor:*
Rotating Machinery
Committee

9:00 A.M.

ENG. SOC. BLDG.
ROOM 502*Chairman:*
H. Hellerman, Univer-
sity of Delaware*Sponsor:*
Electronics Committee

1:45 P.M.

HOTEL STATLER
BALLROOM*Chairman:*
A. C. MONTEITH,
Westinghouse Electric
Corp.

2:30 P.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
H. L. Davis, Jr., Phila-
delphia Electric Co.*Sponsor:*
Transmission and Distri-
bution Committee**ROTATING MACHINERY**

- 59-25. Evaluation of the Internal Insulation of Generator Coils Based III on Power Factor Measurements. D. A. Findlay, Saguenay Power Co., Ltd. R. G. Brearley and C. C. Louttit, Aluminum Company of Canada, Ltd.
- 58-1311. A Utility's Functional Evaluation Tests for High Voltage III Stator Insulation. A. W. W. Cameron and M. Kurtz, Hydro-Electric Power Commission of Ontario.
- 58-1312. Experience in Analysis of D-C Insulation Tests for Main- III tenance Programs. F. R. Schleif and L. R. Engvall, U.S. Bureau of Reclamation.
- CP58-1391. Accelerated Voltage Endurance Tests. R. H. Rhudy and H. E. Mazanek, General Electric Co.

MODERN CIRCUIT TECHNIQUES—IV

- CP.* A Technique For Drift Reduction in Semiconductor Direct- Coupled Circuitry. T. B. Martin, Radio Corp. of America and J. E. Lindsay, Cornell Aeronautical Laboratories.
- CP.* Transistor D. C. Amplifiers. R. H. Okada, Univ. of Pennsyl- vania.
- CP.* A Five-Watt, 14 mc Transistor Transmitter. J. Sevick, Bell Telephone Laboratories.
- CP.* The Design of Self-Balancing Diode-Ring Modulators and Their Extension to Several Unfamiliar Applications. P. M. Thompson, Defence Research Telecommunications Establish- ment.
- CP.* Low Level Silicone Transistor Chopper. F. Schlereth, General Electric Co.
- CP.* Transistorized Phase Modulator. C. S. Kim, General Electric Co.

**PRESENTATION OF THE JOHN FRITZ MEDAL TO
DR. M. J. KELLY**

History of the Medal: L. F. Reinartz, Past President, American Institute of Mining, Metallurgical and Petroleum Engineers. Career of the Medalist: Lewis K. Sillcox, Past President, American Society of Mechanical Engineers. Presentation of the Medal: A. C. Monteith, Past President, American Institute of Electrical Engineers. Response: Dr. Kelly, Bell Telephone Laboratories.

TRANSMISSION AND DISTRIBUTION

- 59-82. Bundled Conductor Voltage Gradient Calculations. J. Reich- III man, The Hydro-Electric Power Commission of Ontario.
- 59-98. Relationship Between Corona and Radio Noise on Transmis- III sion Lines Part II—Conductor and Insulator Corona. T. W. Liao and J. J. LaForest, General Electric Co.
- 59-49. Radio Noise Propagation and Attenuation Tests on Bonne- III ville Power Administration McNary-Ross 345 KV Line. G. E. Adams and T. W. Liao, General Electric Co.; M. G. Poland, Bonneville Power Administration; F. J. Trebby, Kaiser Alu- minum and Chemical Corp.
- 59-95. Wave Propagation Along Unbalanced High Voltage Transmis- III sion Lines. G. E. Adams, General Electric Co.

WED. (Continued)

2:30 P.M.

HOTEL STATLER
BALLROOM**Chairman:**S. N. Witts, Northern
States Power Co.**Sponsor:**System Engineering
Committee

2:30 P.M.

HOTEL STATLER
SKYTOP**Chairman:**J. H. Vivian, Southern
Calif. Edison Co.**Sponsor:**

Switchgear Committee

2:30 P.M.

H'I'L GOV. CLINTON
CHELSEA ROOM**Chairman:**J. W. Jones, Philadel-
phia Electric Co.**Sponsor:**Rotating Machinery
Committee

2:30 P.M.

HOTEL STATLER
WEST ROOM**Chairman:**M. Middleton, Jr., Inter-
national Business Ma-
chines Corp.**Sponsor:**Computing Devices
Committee**SYSTEM ENGINEERING**

- 59-225. Theory of Economic Operation of Interconnected Areas. R. H. III Kerr and L. K. Kirchmayer, General Electric Co.
- CP59-239. The Use of Power Transfer Equations to Derive Economic Coordination Relationships Expressed as Functions of Voltage Phase Angles. A. R. Miller, Lehigh University; H. R. Koen, Jr., Minneapolis-Honeywell Regulator Co.; J. S. Deliyannides, Rensselaer Polytechnic Institute.
- CP.* Measurement of the Transfer Functions in the Electric Power Systems Using Spontaneous Power Variations. M. Mesarovic, Massachusetts Institute of Technology and I. Obradovic, Institute "Nikola Tesla."
- 58-952. Economic Complementary Operation of Hydro Storage and Steam Power in the Integrated TVA System. R. N. Brudenell and J. H. Gilbreath, Tennessee Valley Authority. (Re-presented for Discussion only)

SWITCHGEAR

- 59-41. The X/R Method of Applying Power Circuit Breakers. J. E. III Skuderna, U.S. Bureau of Reclamation.
- CP59-186. Proposed Revision of American Standard—Alternating-Current Power Circuit Breakers C37.4. AIEE New Working Group on Methods of Rating Power Circuit Breakers.

ROTATING MACHINERY

- 59-3. An Accurate Method of Calculation of Subtransient Reactances of Synchronous Machines. K. B. Menon, Indian Institute of Technology.
- 59-140. A Hydrostatic Thrust Type Shaft Seal for Hydrogen Cooled Generators. W. W. Gardner, A. Lehrkind and W. L. Ringland, Allis-Chalmers Mfg. Co.
- CP59-141. Application of the Piecewise Linear Method to the Analysis of Direct-Axis Transient Response of Saturated Alternators. S. L. Mikhail, Univ. of California.
- 58-1151. Development of Device to Protect Turbogenerator From Damage Because of Thrust Bearing Failure. R. Bruce, C. A. Roberts and K. C. Byram, Tennessee Valley Authority.
- 59-121. Modern Large Steam Turbines and Generators. C. C. Franck, III Sr. and J. W. Batchelor, Westinghouse Electric Corp. (Re-presented for Discussion only)

DIGITAL COMPUTER TECHNIQUES

- CP59-205. Symmetric Switching Functions (Matrix Logic V). E. J. Schubert, Burroughs Corp.
- CP59-204. Matrix Algebra of Sequential Logic. E. J. Schubert, Burroughs Corp.
- CP59-195. Digital Technique for Block Diagram Reduction. J. D. Ashley and L. P. Matthews, North American Aviation, Inc.
- 59-196. System Synthesis With the Aid of Digital Computers. J. B. I Dennis, R. F. Nease and R. M. Saunders, University of California. (Re-presented for Discussion only)

WED. (Continued)

2:30 P.M.

HOTEL STATLER
PENN TOP SOUTH**Chairman:**H. P. Walker, Navy
Dept., Bureau of Ships**Sponsor:**Electrical Insulation
Committee

2:30 P.M.

HOTEL STATLER
EAST ROOM**Chairman:**H. W. Lord, General
Electric Co.**Sponsor:**

Electronics Committee

2:30 P.M.

HOTEL STATLER
TERRACE ROOM**Chairman:**E. R. Owen, General
Electric Co.**Sponsor:**Feedback Control Sys-
tems Committee

2:30 P.M.

HOTEL McALPIN
BALLROOM**Chairman:**H. J. Sutton, Gulf States
Utilities**Sponsor:**Power Systems Com-
munications and Re-
lays Committees**ELECTRICAL INSULATION**

- CP.* A New Test Method for Evaluating Fabrication Properties of Sheet Insulation. J. R. Huntsberger, E. I. duPont de Nemours & Co.
- CP59-113. Thermal Evaluation of Rigid Electrical Insulating Materials, a Proposed Test Procedure and Problems Related Thereto. AIEE Working Group on Rigid Materials. K. Wechsler, Chairman.
- 58-1167. New Organic Insulation for a 500°C Electrical Equipment. I C. H. Vondracek and E. J. Croop, Westinghouse Electric Corp.
- 59-118. Mathematics of Insulation Aging Calculations. L. C. Whitman, General Electric Co. and W. W. Whitman, Cornell University.
- CP.* Parallel Electric Breakdown Tests of Rigid Electrical Insulating Materials in an Oil Medium. K. Wechsler and M. Riccitiello, Westinghouse Electric Corp.

TRANSIENTS IN RECTIFIER CIRCUITS

- CP.* Voltage Transients Due to Arc Extinction. H. C. Steiner and R. W. Strecker, General Electric Co.
- CP59-124. The Effects of Transformer Parameters on Commutation Transients in Rectifier Circuits. R. P. Massey, Bell Telephone Labs.
- 59-149. Transient Voltages in Rectifier Transformers. B. C. Biega and II H. W. Lord, General Electric Co.
- CP59-150. High Voltage Rectifier Transformer Problems. T. L. Wilson, National Cylinder Gas Co.
- CP.* RC Transient Suppression Circuits for Silicon Rectifiers. R. G. Martin, Westinghouse Electric Corp.

THEORY AND PRACTICE OF REACTOR CONTROL

- CP58-1362. A Digital Nuclear Reactor Control System. E. P. Gyftopoulos, Massachusetts Institute of Technology and P. M. Coble, Stevens, Davis, Miller & Mosher.
- CP.* The Effect of Feedwater Control on A Pressurized Reactor. E. F. Borner, General Electric Co.
- CP.* Automatic Control of Boiling Water Reactors. M. A. Head, General Electric Co.
- CP.* Variable Moderator Level Control of Boiling Water Reactor. S. R. Nixon, American Standard Corp.
- CP58-1332. A Stability Study of An Atomic Power Plant. R. W. Albrecht, University of Michigan.

POWER SYSTEMS COMMUNICATIONS AND RELAYS

- 59-58. Staged Fault Tests With Power Line Carrier Transferred Trip III Relaying For Line Protection. D. E. Jones, Hydro-Electric Power Commission of Ontario.
- CP.* A Ten-Watt All-Transistorized Transmitter-Receiver for Pilot Relaying. T. A. Cramer and P. R. Crooker, General Electric Co.
- 58-1190. Protection of Pilot-Wire Relay Circuits. AIEE Subcommittee III on Pilot Wires. J. L. Blackburn, Chairman.
- 59-81. Relaying for Synchronous Motor Pull-Out Protection. A. H. III Hoffman, C. Raczkowski and R. B. Squires, Westinghouse Electric Corp.

WED. (Continued)

2:30 P.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
H. H. Zielinski, General
Electric Co.*Sponsor:*
Industrial Power Recti-
fiers and Chemical
Industry Committees

2:30 P.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
E. H. Browning, West-
inghouse Elec. Corp.*Sponsor:*
Metal Industry Commit-
tee

2:30 P.M.

HOTEL McALPIN
RED ROOM*Chairman:*
D. W. Borst, General
Electric Co.*Sponsor:*
Solid State Devices and
Semiconductor Metal-
lic Rectifiers Com-
mittees

2:30 P.M.

HOTEL STATLER
PENN TOP NORTH*Chairman:*
G. C. Sziklai, Westing-
house Electric Corp.*Sponsor:*
Communication Theory
Committee**INDUSTRIAL POWER RECTIFIERS**

- CP.* Germanium Rectifiers for Electrochemical Processes. J. H. Michaels and E. T. Myslinsky, Columbia-Southern Chemical Corp.
- CP.* High Current Low Voltage Supply for Nuclear Power. A. E. Johnson, A. O. Smith Corp. and E. J. Diebold, International Rectifier Corp.
- CP59-253. Recent Application of Conversion Equipments to Electrolytic Processes. K. McCaskill and A. G. Forster, Hooker Chemical Corp.

DRIVE SYSTEMS FOR ROLLING MILLS

- CP58-1340. The Electrical Characteristics of a Universal Slabbing Mill. C. J. Bevan, Bethlehem Steel Co.
- CP.* Industrial Control Designs for a Changing Technology. P. A. Trivisano, General Electric Co.
- CP.* Control Equipment for Reversing Hot Mill Main Drives. G. A. Kaufman, General Electric Co.
- CP.* Operation of Rectifiers in Parallel With Existing Generators to Increase Power For Hot Strip Mill Operation. G. Eckenstaler, Allis-Chalmers Mfg. Co.

SEMICONDUCTOR SWITCHING DEVICES—II

- CP58-1397. High-Current Trinistors. F. S. Stein and E. W. Torok, Westinghouse Electric Corp.
- CP.* A Silicon High Current Transistor Switch of Low Saturation Resistance. D. Navon and P. DeBeurs, Transitron Electronic Corp.
- 58-1260. Silicon Controlled Rectifiers from Oxide-Masked Diffused Structures. R. W. Aldrich and N. Holonyak, Jr., General Electric Co.
- 58-1206. Linear Power Amplifiers Using Dynistors or Trinistors. I F. J. Hierholzer, Jr., Westinghouse Electric Corp.
- CP58-1347. The Controlled Rectifier in Power Control Applications. W. D. Cockrell, C. S. Walker and J. D. Harnden, Jr., General Electric Co.
- 58-1234. The Controlled Rectifier—Key to the Continuing Control Renaissance. J. D. Harnden, Jr., General Electric Co. (Re-presented for Discussion only)

COMMUNICATIONS IN SPACE

Panel-type presentation and discussion by:

- CP.* Dr. R. L. Shuey, General Electric Co.
- CP.* Prof. R. M. Fano, Massachusetts Inst. of Technology.
- CP.* J. R. Pierce, Bell Telephone Labs., Inc.
- CP.* J. H. Vogelmann, Rome Air Development Center.

WED. (Continued)

2:30 P.M.

H'T'L GOV. CLINTON
GREELEY ROOM*Chairman:*
A. S. Hill, Western
Union Telegraph Co.*Sponsor:*
Telegraph Systems Com-
mittee

2:30 P.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
D. E. Zimmerman, Gen-
eral Telephone Co. of
Pa.*Sponsor:*
Wire Communication
Systems Committee

2:30 P.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
F. K. Harris, National
Bureau of Standards*Sponsor:*
Indicating and Integrat-
ing Instruments Com-
mittee**TELEGRAPH SYSTEMS**

- 59-153. More About Non-Armored Submarine Cable. C. S. Lawton, I Western Union Telegraph Co.
- 59-85. A Transistorized 20 Channel Carrier Telegraph Terminal. I T. M. Grybowski and W. G. Veith, The Western Union Telegraph Co.
- CP.* Error Detecting, Servo Correcting Phasing System for Facsimile. A. G. Cooley and H. Strickholm, Times Facsimile Corp.
- CP.* Advances in the Printing Telegraph Art During 1958. E. F. Watson, Bell Telephone Labs. (Retired)
- CP.* Advances in the Facsimile Art During 1958. W. H. Bliss, RCA Laboratories.

WIRE COMMUNICATION SYSTEMS

- 59-70. Engineering Aspects of TASI. K. Bullington and J. M. Fraser, I Bell Telephone Labs.
- CP.* The Syncroplex Telephone Carrier System. B. G. Coetsee, ITT Laboratories.
- CP.* Applications and Maintenance Considerations of the K24 Syncroplex System. J. W. Halina and G. L. Curtis, ITT Laboratories.
- CP.* A General Description of the K24 Syncroplex Carrier System. J. W. Halina and G. L. Curtis, ITT Laboratories.
- 59-71. Electrical Protection for Transistorized Equipment. D. W. I Bodle and J. B. Hays, Jr., Bell Telephone Labs.
- CP59-259. A New Field Telephone for Military Use in Four Wire Electronic Switching Systems. J. L. Faherty, U.S. Army Signal Research and Development Laboratories and A. S. Howell, Stromberg-Carlson Co.

INDICATING INSTRUMENTS

- 59-161. A Wide-Range Volt-Ampere Converter for Current and Volt- I age Measurements. F. L. Hermach and E. S. Williams, National Bureau of Standards. (Re-presented for Discussion only)
- 59-158. An Impedance Bridge for Surface Temperature Measurement. I R. J. Mouly, Corning Glass Works.
- 59-159. Taut Band Suspensions for 250 Degree Instruments. V. S. I Thomander and R. C. MacIndoe, Westinghouse Electric Corp.
- CP59-125. An Electrical Indicating Instrument Designed to Use Molded Magnet Techniques. H. Otmann, Jr., Westinghouse Electric Corp.
- CP.* Advantages and Limitations of Plastic Bonded Magnets. C. A. Maynard, Indiana Steel Products Co.
- 59-22. A Method for Calibration of Precision Voltage Dividers. I C. B. Pinckney, Hughes Aircraft Co. (Re-presented for Discussion only)

WED. (Continued)

2:30 P.M.

ENG. SOC. BLDG.
ROOM 502**Chairman:**

J. E. Williams, University of Illinois

Sponsor:

Rotating Machinery Committee

8:00 P.M.

HOTEL STATLER
EAST ROOM**Chairman:**

S. T. Maunder, General Electric Co.

Sponsor:

Electronics Committee

8:00 P.M.

HOTEL STATLER
TERRACE ROOM**Chairman:**

G. C. Newton, Massachusetts Institute of Technology

Sponsor:

Feedback Control Systems Committee

THURSDAY—FEB. 5

9:00 A.M.

HOTEL STATLER
BALLROOM**Chairman:**

L. K. Kirchmayer, General Electric Co.

Sponsor:

Power Generation and System Engineering Committees

ROTATING MACHINERY

- 59-142. The Establishment of a Base for Class A Random Wound III Motor Insulation Life by AIEE No. 510 Test Procedure and Its Correlation With Field Experience. R. L. Balke and D. R. Blake, General Electric Co.
- 58-1280. Results of Motorette Evaluation of Insulation Systems. H. P. III Boettcher, A. O. Smith Corp.
- CP59-126. A Bridge Circuit for Measuring the Temperature of Alternating Current Energized Windings. R. E. Seely, General Electric Co.
- CP59-143. Synthesis of Double-Cage Induction Motor Design. H. E. Jordan, Reliance Electric & Engineering Co.

TRANSIENTS IN RECTIFIER CIRCUITS**AUTOMATION IN THE SOVIET UNION**

Members of the Panel are:

- CP.* S. W. Herwald, Westinghouse Electric Corp.
- CP.* N. Cohn, Leeds and Northrup Co.
- CP.* W. E. Vannah, McGraw Hill Publishing Co.
- CP.* R. J. Kochenburger, Univ. of Connecticut
- CP.* E. J. Kelly, Massachusetts Institute of Technology

POWER SYSTEM OPERATION—MAINTENANCE COSTS

- 58-1308. Fundamental Concepts of Incremental Maintenance Costs as III Used by Ohio Edison Company. D. B. Zelenka and R. H. Travers, Ohio Edison Co.
- CP58-1309. Determination of Output Maintenance Costs on the West Penn Electric System. R. L. Ballentine, Potomac Edison Co.; W. S. Schmidt and T. A. Lake, Monongahela Power Co.; H. T. McCarthy and R. F. Crim, West Penn Power Co.;
- 58-1187. Application of Digital Computer Technique for Development III of the Incremental Maintenance Cost. F. H. Light, Philadelphia Electric Co.
- 58-1336. Report on Present Day Practices of Handling Incremental III Maintenance Costs as They Apply to Economic Dispatch of Power. AIEE Working Group on Application of Incremental Heat Rates for the Economic Dispatch of Power, Presented by L. T. Anstine.
- Panel Discussion:
Moderator: CP.* G. H. McDaniel, American Electric Power Service Corp.
- CP.* L. T. Anstine, Baltimore Gas & Electric Co.
- CP.* W. S. Schmidt, Monongahela Power Co.
- CP.* R. H. Travers & D. B. Zelenka, Ohio Edison Co.
- CP.* F. H. Light, Philadelphia Electric Co.
- CP.* R. L. Ballentine, Potomac Edison Co.
- CP.* H. T. McCarthy, West Penn Power Co.

THURS. (Continued)

9:00 A.M.

HOTEL McALPIN
BALLROOM**Chairman:**

C. A. Woodrow, General Electric Co.

Sponsor:

Switchgear Committee

9:00 A.M.

H'T'L GOV. CLINTON
GOVERNOR ROOM**Chairman:**

H. C. Barnes, American Electric Power Service Corp.

Sponsor:

Rotating Machinery and Relays Committees

9:00 A.M.

HOTEL McALPIN
RED ROOM**Chairman:**

J. R. Perkins, E. I. du Pont de Nemours and Co.

Sponsor:

Electrical Insulation Committee

9:00 A.M.

HOTEL STATLER
PENN TOP NORTH**Chairman:**

L. S. Schwartz, New York University

Sponsor:

Communication Theory Committee

SWITCHGEAR

- CP59-187. Twenty Years' Experience With Outdoor Single-Tank Oil Circuit Breakers. S. Clare and W. O. Rowan, The Hydro-Electric Power Commission of Ontario.
- 59-47. Development of a 230 kv 20,000 mva Oil Circuit Breaker. F. L. III Reese, Westinghouse Electric Corp.
- 59-63. A Line of 115 kv Through 460 kv Air-Blast Circuit Breakers. III R. B. Shores, J. W. Beatty, H. T. Seeley and W. R. Wilson, General Electric Co.
- 59-101. A New Concept in Power Circuit Breaker Design Utilizing III SF-6. R. E. Friedrich and R. N. Yeckley, Westinghouse Electric Corp.

RELAYS AND ROTATING MACHINERY

- 59-38. Factors Influencing Starting Duty of Large Induction Motors. III V. J. Picozzi, General Electric Co.
- 59-13. Squirrel Cage Motor Characteristics Useful in Setting Protective Devices. F. R. Karr, Westinghouse Electric Corp.
- 59-29. Heating of Induction Motors on Unbalanced Voltages. B. N. III Gafford and W. C. Duesterhoeft, Jr., Univ. of Texas; C. C. Mosher III, Stanford University.
- 59-28. Thermal-Synthesis Relay Is Best Replica of Motor Heating. III B. N. Gafford, The Univ. of Texas.

ELECTRICAL INSULATION

- CP.* A Survey of Methods Used in Corona Measurement on Insulation Systems. O. X. Heinrich, J. G. Biddle Co.
- 59-151. The Relation of Capacitance Increase With High Voltages to Internal Electric Discharges. T. W. Dakin, Westinghouse Electric Corp.
- 58-1186. On the Behavior of Natural and Artificial Voids in Insulation Under Internal Discharge. S. I. Reynolds, General Electric Co.
- CP.* Effects of Corona on Polyethylene, Progress Report, Part II. E. J. McMahon, D. E. Maloney and J. R. Perkins, E. I. du Pont de Nemours & Co.
- CP.* Experiments in Corona Level Measurements on Hermetic Motors. R. T. Divers, Carrier Corp.

COMMUNICATION THEORY

- CP.* Asynchronous Multiplexing. J. E. Taylor, General Electric Co.
- 58-1264. Marginal Utility and a Criterion of Performance for Communication and Radar Systems. L. S. Schwartz, New York University.
- CP.* Detection, Perception and Psychophysics. E. C. Carterette, University of California.
- CP.* A Mechanized Radar Observer. G. P. Dineen, Massachusetts Inst. of Technology.

THURS. (Continued)

9:00 A.M.

HOTEL STATLER
WEST ROOM*Chairman:*
H. N. Eanes, Alabama
Power Co.*Sponsor:*
Domestic and Commer-
cial Applications
Committee

9:00 A.M.

HOTEL STATLER
TERRACE LOUNGE*Chairman:*
W. T. Rogers, Ebasco
Services, Inc.*Sponsor:*
Safety Committee

9:00 A.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
H. E. Lokay, Westing-
house Electric Corp.*Sponsor:*
Substations Committee

9:00 A.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
A. Krausz, Jack &
Heintz, Inc., Cleve-
land, Ohio*Sponsor:*
Magnetic Amplifiers &
Semiconductor Metal-
lic Rectifiers Commit-
tees**ELECTRIC SPACE HEATING AND HEAT PUMPS**

- CP59-89. Earth Source Heat Pump Experiments. J. B. McDonald and G. H. West, The Hydro-Electric Power Commission of Ontario.
- CP.* Heat Pump Hermetic Motor Protection. G. I. Biehn and R. S. Stewart, Westinghouse Electric Corp.
- 59-20. Significance of Heat Pump COP. C. W. Bary, Philadelphia II Electric Co.
- CP.* School Heating—The Electrical Engineer's Opportunity. R. L. Boyd, Edwin L. Wiegand Co.
- CP.* Functional Evaluation of Hermetic Motor Insulation. J. L. Ditzler, Westinghouse Electric Corp.

SAFETY

- CP58-1252. An Objective Look at Electrode or Grounding Voltages for Safety on Industrial Machine Controls. H. E. Dow and R. W. Bradley, United Shoe Machinery Corp.
- CP59-92. Polarity Grounding of Direct-Connected Television Receivers. E. W. Bisson, General Electric Co. and L. H. Horn, Underwriters' Labs., Inc.
- CP.* Some Aspects of Grounding, Insulating and Bonding in the Problem of Shock Hazard. J. B. Hays, Bell Telephone Laboratories.
- 59-14. A.C. Shocks of Varying Parameters Affecting the Heart. I W. B. Kouwenhoven, G. G. Knickerbocker, R. W. Chestnut, W. R. Milnor, The Johns Hopkins University and D. J. Sass, The Martin Company.
- 57-1012.. A Comparison of Mouth to Mouth and Manual Artificial I Respiration Techniques. A. S. Gordon and C. W. Frye, University of Illinois.

SYMPOSIUM ON CONVENTIONAL AND UNIT-TYPE SUBSTATIONS IN DISTRIBUTION SYSTEMS**CONTROLLED SEMICONDUCTOR WITH NON-LINEAR MAGNETIC DEVICES**

- CP.* Saturable Current Transformer—Transistor Multivibrator. R. E. Morgan, General Electric Co.
- CP.* Solid-State Power Inversion Techniques. B. D. Bedford, D. A. Paynter and J. D. Harnden, Jr., General Electric Co.
- CP59-217. An All-Solid-State Phase Controlled Rectifier System. F. W. Gutzwiller, General Electric Co.
- CP.* Saturable Cores and Transistors in Power Converters. T. M. Corry and R. P. Putkovich, Westinghouse Electric Corp.

THURS. (Continued)

9:00 A.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
H. A. Frey, General
Electric Co.*Sponsor:*
Transmission and Distri-
bution Committee

9:00 A.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
W. K. Scott, United
States Steel Corp.*Sponsor:*
Metal Industry & Feed-
back Control Systems
Committees

9:00 A.M.

HOTEL STATLER
EAST ROOM*Chairman:*
M. R. Lory, Westing-
house Electric Corp.*Co-chairman:*
J. C. Price, General
Electric Co.*Sponsor:*
Land Transportation &
Rotating Machinery
Committees**TRANSMISSION AND DISTRIBUTION**

- CP59-104. Digital Calculation of Short-Circuit Impedances By Network Subdivision Using Complex Impedances. R. J. Thomas, Tennessee Valley Authority.
- 59-241. Distribution System Primary-Feeder Voltage Control IV—A III Supplementary Computer Program for Main-Circuit Analysis. D. N. Reys and R. F. Cook, Westinghouse Electric Corp.
- 59-53. Ferroresonance in Series Capacitor-Distribution Transformer III Applications. E. F. Kratz, L. W. Manning and M. Maxwell, Westinghouse Electric Corp.
- 59-97. Ferroresonance of Grounded Potential Transformers on Un- III grounded Power Systems. R. F. Karlicek and E. R. Taylor, Jr., Westinghouse Electric Corp.
- 59-55. 240 Volts-to-Neutral Should Be Preferred for Utilization. A. S. III Anderson, C. Hutchinson and S. J. Pearson, Ebasco Services, Inc.
- CP59-181. New Distribution Connector for Standard Crimping Tools. L. S. Greer and C. Catania, Penn Union Electric Corp.

FEEDBACK CONTROL SYSTEMS FOR METAL ROLLING AND PROCESSING

- CP.* Feedback Control Systems in the Metal Rolling and Processing Industries. A. W. Smith and J. W. Cook, Westinghouse Electric Corp.
- 59-78. The Use of Frequency Response Tests in the Analysis of a II Foil Mill Automatic Gage Control. S. J. Jones, Aluminum Co. of America and R. M. Sills, General Electric Co.
- CP58-1390. Simulation of Steel Mill Control Systems. R. A. Phillips, General Electric Co.
- CP.* Hot Strip Mill Gage Control. O. C. Gochenour, Jones and Laughlin Steel Corp.

INSULATION PRACTICES

- 58-1334. The Life Expectancy of Class A Random Wound Motor In- II sulation as Determined by AIEE No. 510 Test Procedure. AIEE Working Group on Insulation for Rotating Machines of the Subcommittee on Insulation, of the Rotating Machinery Committee.
- CP58-1305. Pioneering Insulation Evaluation. C. M. Magers and J. S. Askey, Elliott Co.
- CP.* New Insulation Developments for Traction Motor and Generator Field Coils. W. Schneider and J. R. Shirley, Westinghouse Electric Corp.
- CP.* Glass Polyester Banding of Traction Motor Armatures. W. H. Eunson and E. C. Appleby, Westinghouse Electric Corp.
- CP.* A New Void Free Class H Insulation System For Rotating Machine Windings. G. L. Moses, Westinghouse Electric Corp.

THURS. (Continued)

9:00 A.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
J. S. Ewing, Reliance
Electric and Engineer-
ing Co.*Sponsor:*
Rotating Machinery
Committee

9:00 A.M.

HOTEL STATLER
SKYTOP*Chairman:*
P. L. Dandeno, Hydro
Electric Power Comm.
of Ontario*Sponsor:*
Power Generation Com-
mittee

2:00 P.M.

HOTEL STATLER
SKYTOP*Chairman:*
L. E. Fogg, Kennecott
Wire & Cable Co.*Sponsor:*
Insulated Conductors
Committee

2:00 P.M.

HOTEL STATLER
BALLROOM*Chairman:*
L. B. LeVesconte, Sarg-
ent and Lundy*Sponsor:*
System Engineering
Committee**ROTATING MACHINERY**

- CP59-127. Extension of Coupled Circuit Analysis to D-C Machine Systems (Electro-Mechanical). J. C. Eidson, Scarsdale, N. Y.
- 59-128. The Armature Current Form Factor of a D.C. Motor Connected to a Controlled Rectifier. E. F. Kubler, General Electric Co.
- 59-129. Numerical Method of Calculating Eddy Currents Resulting from Commutation. A. I. Dvoracek, General Electric Co.
- 59-2. Contribution to the Theory of the Brush Collector Contact. III E. Holm, Stackpole Carbon Co.
- CP59-76. Printed Circuit Motors. J. Henry-Baudot, Societe D'Electronique et D'Automatisme. R. P. Burr, Circuit Research Co.

EXCITATION SYSTEMS AND POWER PLANT AUXILIARIES

- 59-215. Auxiliary System for a Supercritical Unit: A Design Based on a Tested System for a Subcritical Unit. J. P. Fitzgerald, C. F. Paulus and H. A. Vargas, The Cleveland Electric Illuminating Co.
- 59-110. Exciter Response Tests for Exciters Controlled by Dynamic Type Voltage Regulators. V. C. Strode, General Electric Co.
- CP59-179. Proposed Excitation System Definitions For Synchronous Machines. AIEE Working Group On Excitation Systems Terms and Definitions. P. L. Dandeno, Chairman.
- 59-109. Performance of Motor-Driven Exciters With Mag-A-Stat Voltage Regulators. T. J. Bliss and M. Enns., Westinghouse Electric Corp.
- 59-23. Automatic Control of Internal Angle On Synchronous Machines. V. A. Kinitsky, Ebasco International Corp.

INSULATED CONDUCTORS

- 59-26. Jointing Polyethylene-Insulated Submarine Cables. D. W. III Kitchin and O. S. Pratt, Simplex Wire and Cable Co.
- 58-1175. Grounding and Cathodic Protection of Pipes for Pipe-Type III Feeders. F. E. Kulman, Consolidated Edison Co. of N. Y., Inc.
- 59-162. Experimental Fault Locating Work on Pipe-Type Cable. H. L. III Garton, C. Jasper, E. J. Steeve and H. R. Winemiller, Commonwealth Edison Co.

APPLICATION OF COMPUTERS TO POWER SYSTEM PROBLEMS

- 59-224. Digital Computation of Power Flow—Some New Aspects. III H. W. Hale, Wayne State Univ. and R. W. Goodrich, U. S. Army Signal Corps.
- 59-103. Digital Computation of Short-Circuit Bus Stresses. C. A. III Imburgia, H. K. Amchin and S. G. Vassiliev, American Electric Power Service Corp.
- 59-99. Application of Row-By-Row Matrix Inversion to Power System Problems. V. Converti, Arizona Public Service Co.
- CP59-263. 230 KV Versus 60KV Subtransmission. V. W. Ruskin and A. Langmuir, B. C. Engineering Co. Ltd.

THURS. (Continued)

2:00 P.M.

HOTEL McALPIN
BALLROOM*Chairman:*
J. B. Owens, I-T-E Cir-
cuit Breaker Co.*Sponsor:*
Switchgear Committee

2:00 P.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
H. Hamer, Electronic
Associates, Inc.*Sponsor:*
Computing Devices
Committee

2:00 P.M.

HOTEL McALPIN
RED ROOM*Chairman:*
W. H. Wickham, Com-
monwealth Edison Co.*Sponsor:*
Electrical Insulation**SWITCHGEAR**

- CP.* High Power Laboratory Tests on High Capacity High Voltage Oil Circuit Breakers. N. Reed, Kelman Electric Mfg. Co. and E. B. Rietz, I-T-E Circuit Breaker Co.
- 59-188. Field Tests on a 345-kv High Capacity Oil Circuit Breaker at Philip Sporn Power Plant. O. Naef and J. D. M. Phelps, American Electric Power Service Corp.; W. R. Wilson and A. L. Streater, General Electric Co.
- CP59-100. A 15 kv Vacuum Capacitor Switch—Development and Field Experience. H. B. Balfour, Jr., Louisiana Power and Light Co.; H. M. Pflanz and G. N. Lester, Allis-Chalmers Mfg. Co.
- CP59-221. Selective Silver Plating of Aluminum and Copper Bus, Switch-Gear and Related Components by the Powder Weld Hot Melt Process. R. A. Wiese, The Powder Weld Process Co.

ANALOG COMPUTER TECHNIQUES

- 59-10. Application of Finite Integral Transforms to Analog Simulations W. J. Karplus, University of California and P. A. Stephens, Jr., Hughes Aircraft Co.
- 58-1198. The Operational Amplifier as a Laboratory Tool. P. E. Pfeiffer, The Rice Institute.
- CP59-190. On the Measurement Problem in Adaptive Systems Utilizing Analog Computer Techniques. R. M. Corbin, U.S. Army.
- CP.* Contour Tracing With An Analog Computer. H. K. Skramstad, National Bureau of Standards.
- CP59-207. Real Time Simulation of a Jet Engine on an Analog Computer. S. J. Jennings, General Electric Co.

ELECTRICAL INSULATION

- CP.* Corona Tests on Oil Insulated Transformers. F. J. Vogel, Allis-Chalmers Mfg. Co.
- CP.* Corona Level Measurements on Insulated Cable. I. J. Marwick and R. C. Graham, Rome Cable Corp.
- CP.* The Importance in Detecting Corona in Capacitor Dielectrics and Methods of Detection. H. H. Brustle and N. A. Sidnell, General Electric Co.
- CP.* Importance of Corona Suppression in Capacitors Insulated With Mylar Polyester Film. L. V. Baldwin, E. I. duPont de Nemours & Co.
- CP.* Motion Pictures of Tree Breakdowns Between Needle Points. D. W. Kitchin and O. S. Pratt, Simplex Wire and Cable Co.
- 59-24. Rapid Determination of Corona Loss from Voltage-Charge Diagrams. H. S. Dixon, Berkeley Laboratory. (Re-presented for Discussion only)

THURS. (Continued)

2:00 P.M.

HOTEL STATLER
PENN TOP NORTH*Chairman:*
J. H. Vogelmann, Rome
Air Develop. Center*Sponsor:*
Communication Theory
Committee

2:00 P.M.

HOTEL STATLER
TERRACE LOUNGE*Chairman:*
T. S. Novak, Bethlehem
Steel Corp.*Sponsor:*
Metal Industry Commit-
tee

2:00 P.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
G. K. Dittlow, Rural Elec-
trification Administra-
tion*Sponsor:*
Safety Committee

2:00 P.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
J. A. Smith, General
Electric Co.*Sponsor:*
Substations Committee**SINGLE-SIDEBAND THEORY AND TECHNIQUES**

- CP.* Suppressed Carrier Single Sideband. E. W. Pappenfus, Collins Radio Co.
- CP.* Single Sideband Using Re-Inserted Carrier. W. L. Firestone, Motorola, Inc.
- CP.* Testing of Voice Communications Systems Using Phonetically Balanced Word Lists. G. E. Renaud, Human Engineering Laboratory.
- CP.* Doppler Shift Versus the Intelligibility Score as a Function of Signal to Noise. J. Nickerson and D. K. Weaver, Jr., Montana State College.

PROGRAMMING AND DATA PROCESSING IN THE STEEL INDUSTRY

- CP58-1399. An Automatic Numerical Data Logging System for Tinplate Lines. G. E. Terwilliger, General Electric Co.
- CP.* Programming of Reversing Hot Mills. M. W. Brittain and E. H. Browning, Westinghouse Electric Corp.
- CP.* A New System for Fully Card Programmed Blooming Slabbing Mill Operation. E. F. Boening, Allis-Chalmers Mfg. Co.
- CP.* A Programming System for Reversing Hot Mill Drives. J. T. Bradford, General Electric Co.

SYMPOSIUM ON SAFETY BY INTERLOCKING AND BY INTRINSIC AND INHERENT DESIGN

- CP.* Conveyors and Passenger Ramps. J. C. Webb, J. C. Webb Co.
- CP.* Elevators and Escalators. E. B. Dawson, Westinghouse Electric Corp.
- CP.* Production Inspection and Test Equipment. E. T. Angell, General Electric Co.
- CP.* High Voltage Laboratory Test Equipment. T. Brownlee, General Electric Co.
- CP.* Machine Tools. D. L. Pierce, Westinghouse Electric Corp.
- CP.* Utility Company Equipment. D. L. Greene, Gilbert Associates, Inc.
- CP.* Flame Safeguarding. F. Deziel, Minneapolis-Honeywell Regulator Co.
- CP.* Electrical Switchgear. W. C. Fulton, Westinghouse Electric Corp.
- CP.* Printing Presses. H. R. Behr, Goss Printing Press.
- CP.* Industrial Control. F. L. Fisher, Allen Bradley Co.

SUBSTATIONS

- CP59-193. Standard Substation Designs Are Not Permanent. W. R. Smith, Pennsylvania Power & Light Co.
- 58-1008. Zig-Zag Configuration in High Voltage Ring-Bus Substation. III R. N. Connelly, Sacramento Municipal Utility District and R. F. Gibbons, Federal Pacific Electric Co.
- CP59-189. Rationalization of Electrical Clearances for Applications at EHV's 230 KV to 460/500 KV. P. L. Bellaschi, Portland, Ore.
- CP59-213. The Corona and Radio Influence Voltage Characteristics of Substation Connectors and Bus Supports. N. L. Nilsson, K. A. Fleck, Anderson Electric Corp.; P. B. Jacob, Jr., Mississippi State University.

THURS. (Continued)

2:00 P.M.

HOTEL STATLER
EAST ROOM*Chairman:*
C. M. Hines, Westing-
house Air Brake Co.*Co-chairman:*
R. E. Stillwagon, West-
inghouse Elec. Corp.*Sponsor:*
Land Transportation
Committee

2:00 P.M.

H'T'L GOV. CLINTON
GOVERNOR ROOM*Chairman:*
R. A. Larner, Texas Elec-
tric Service Corp.*Sponsor:*
Relays Committee

2:00 P.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
D. D. Pidhayny, Ramo-
Wooldridge Corp.*Sponsor:*
Feedback Control Sys-
tems Committee

2:00 P.M.

H'T'L GOV. CLINTON
CHELSEA ROOM*Chairman:*
J. C. Beckett, Wesix
Electric Heater Co.*Sponsor:*
Electrical Techniques in
Medicine and Biology
Committee**AUXILIARIES**

- CP58-1207. Car Accelerator For Railroad Classification Yards. J. D. Hughson, General Railway Signal Co.
- 58-1159. A Novel Generating System For Railroad Cabooses. L. B. Haddad, R. A. Vercella and D. W. Brown, Safety Industries, Inc.
- CP59-247. Improved D-C High-Potential Testing of Insulation Systems in Low and Medium Voltage D-C Equipment. A. M. Odok, General Electric Co. and T. M. Soelaiman, Universitas Indonesia.

RELAYS

- 59-93. A Device for Solving Mutual Induction Problems on a D-C III Network Analyzer. T. Karlsen and H. A. Wallhausen, The Detroit Edison Co.
- CP59-5. The Importance of High Voltage Transmission Line Mutual Coupling on Ground Fault Relaying. M. J. Lantz, Bonneville Power Administration.
- 59-44. The Coordination and Testing of Protective Relays in Industrial Plants. T. L. Bourbonnais II, E. I. du Pont de Nemours & Co.
- 59-21. Bibliography of Relay Literature 1955-1956. AIEE Subcommittee of Relay Literature of the Committee on Relays. R. W. Hirtler, Chairman.

THE SPECIFICATIONS OF COMPONENTS FOR CONTROL SYSTEMS

- CP.* Hydraulic Transfer Valves. J. Gibson.
- CP.* Motor Tachometers. W. Sollicito.
- CP.* Gyros. P. P. Fischer.
- CP.* Magnetic Amplifiers. H. Trueblood.
- CP.* Transformers. D. D. Pidhayny.

ELECTRICAL TECHNIQUES IN MEDICINE AND BIOLOGY

- CP.* A Six Channel Oscilloscope Switch. G. N. Webb and R. N. Glackin, Johns Hopkins Hospital.
- CP59-236. Technical Solutions to the Problem of Reducing Patient Dosage. J. E. Jacobs, General Electric Co.
- CP.* Use of Computers for Pedigree Problems in Human Genetics. J. H. Renwick, Johns Hopkins Hospital.
- 57-316. Standards for Measurement of Brightness Intensification in I Fluoroscopic Image Intensifiers. W. S. Lusby, Westinghouse Electric Corp.

THURS. (Continued)

2:00 P.M.

HOTEL STATLER
WEST ROOM*Chairman:*
D. L. Solomon, Army
Communication Engineering Agency*Sponsor:*
Communication Switching Systems Committee**FRIDAY—Feb. 6**

9:00 A.M.

HOTEL STATLER
GEORGIAN ROOM*Chairman:*
A. B. Weaver, Central
Power and Light Co.*Sponsor:*
Transmission and Distribution Committee

9:00 A.M.

HOTEL McALPIN
BALLROOM*Chairman:*
F. M. Hull, The Detroit
Edison Co.*Sponsor:*
Insulated Conductors
Committee

9:00 A.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
J. F. Calvert, University
of Pittsburgh*Sponsor:*
Power Generation Committee**COMMUNICATION SWITCHING SYSTEMS**

- 59-185. Indialing to P.B.X. Extensions—Application in a Step-By-Step Central Office Area. G. N. Schleinkofer, The Bell Telephone Co. of Pennsylvania.
- CP59-184. Calling Number Identification for Toll Ticketing Service. T. E. Ellis, Stromberg-Carlson Co.
- CP59-183. Automatic Ticketing Systems As Applied To Medium-Sized Telephone Networks. M. A. Clement, Stromberg-Carlson Co.
- CP59-180. Magnetic Tape Storage For Direct Distance Dialing. L. K. Armstrong, Stromberg-Carlson Co.
- 59-33. Evaluation of Solderless Wrapped Connections for Central Office Use. S. J. Elliott, Bell Telephone Labs., Inc.

DISTRIBUTION TRANSFORMER LOAD MANAGEMENT

- 59-240. Determination of Distribution Transformer Loading From III KWHR Consumption by Electronic Computation. C. F. Mitchell and J. A. Hughes, Commonwealth Edison Co.
- CP59-201. A Method of Obtaining Distribution Transformer Load Data from Meter-Book Readings. L. J. Weed, Boston Edison Co.
- CP.* The Use of Data Processing Machines for Distribution Transformer Load Management. L. J. Rankine, International Business Machines Corp.
- 59-32. Rural Distribution Transformer Loading. T. R. McDonald, III D. B. Price and H. W. Thiesfeld, Rural Electrification Administration.
- CP59-192. Distribution Transformer Load Management. R. F. Lawrence and A. M. Lockie, Westinghouse Electric Corp.
- 59-155. Distribution Transformer Load Management. P. G. Brittain, III Dallas Power and Light Co.

INSULATED CONDUCTORS

- 59-27. Classification and Standardization of Cable and Limiters for III Secondary Network Systems. I. Matthyse, Burndy Corp.
- CP59-163. Temperature Classification of Secondary Network Cable Insulations and Jackets. G. J. Crowdes and J. J. McNiff, Simplex Wire and Cable Co.
- CP59-164. Potheadless Terminations of 38 KV Rubber Insulated Cable and Joint to 35KV Paper and Lead Cable. A. M. Gates, Philadelphia Electric Co.

THE YOUNG ENGINEERS IN THE POWER INDUSTRY

- CP58-1146. The Young Electrical Engineer in a Small Public Utility Company. H. W. Evis, Jr., Fitchburg Gas and Electric Co.
- CP58-1147. The Young Electrical Engineer With a Consulting Engineering Firm. J. C. Hitt, Jackson and Moreland, Inc.
- CP58-1148. The Electrical Engineer in Power Equipment Design. E. S. Coleman, Westinghouse Electric Corp.
- CP58-1149. The Young Electrical Engineer in a Large Public Utility Company. C. F. Paulus, The Cleveland Electric Illuminating Co. and R. L. Webb, Consolidated Edison Co. of N. Y., Inc.

FRI. (Continued)

9:00 A.M.

H'T'L GOV. CLINTON
GOVERNOR ROOM*Chairman:*
J. R. Wilson, General
Electric Co.*Sponsor:*
Substations, Relays and
Switchgear Committees

9:00 A.M.

HOTEL STATLER
EAST ROOM*Chairman:*
J. B. Ward, Pacific Pwr.
& Light Co.*Sponsor:*
Computing Devices and
System Engineering
Committees

9:00 A.M.

HOTEL McALPIN
CRYSTAL ROOM*Chairman:*
H. W. Lord, General
Electric Co.*Sponsor:*
Magnetic Amplifiers
Committee**RELAYS, SUBSTATIONS AND SWITCHGEAR**

- 59-212. Fuse Protection of High Voltage Power Transformers. R. A. III Larner and K. R. Gruesen, Texas Electric Service Co.
- CP59-211. Distribution Feeder Protection Co-Ordination. W. Burch, Carolina Power and Light Co.
- CP.* Application and Design Features of a New Two Cycle Air-Magnetic Power Circuit Breaker. A. W. Simpson and J. A. Smith, General Electric Co.
- CP.* Use of Supervisory and Alarm Equipment for Small Distribution Substations. P. M. Black, Commonwealth Edison Co. and H. W. Buss, Rochester Gas and Electric Co.
- CP.* Recent Developments in Supervisory Equipment for Utility and Industrial Use. G. E. Guy and P. W. Schirmer, General Electric Co.

ELECTRIC UTILITY APPLICATION OF DIGITAL COMPUTERS

The price of S-109 is \$1.50 per copy.

- 59-62. Iteration Methods for Digital Load Flow Studies. J. E. Van III Ness, University of California.
- 59-222. A New Digital Transient Stability Program. M. S. Dyrkacz III and D. G. Lewis, General Electric Co.
- 59-73. Calculation of Transient Stability Problems Using a High-Speed Digital Computer. G. W. Stagg, A. F. Gabrielle, D. R. Moore and J. F. Hohenstein, American Electric Power Service Corp.
- S109. Second Report on Survey of Electric Utility Applications of Digital Computers. AIEE Computer Application Subcommittee of System Engineering Committee and Applications Subcommittee of Computing Devices Committee.

MAGNETIC AMPLIFIERS

- 58-1232. On Feedback in Magnetic-Amplifiers Part II: Combined I Magnetic and Electric Feedbacks. L. A. Finzi, Carnegie Inst. of Technology and J. J. Suozzi, Bell Telephone Labs.
- 59-176. Long Time Delays From A Single Magnetic Storage Core. I C. E. Hardies, Magnetics, Inc.
- 59-174. Automatic Regulators With Self-Balancing Magnetic Amplifiers. W. A. Geyger, U.S. Naval Ordnance Lab.
- 59-177. Proposed Standard Test Codes for Magnetic Amplifiers. AIEE I Standards Subcommittee of the AIEE Magnetic Amplifier Committee, F. G. Timmel, Chairman.
- 59-175. Observation of Transients in the Series Connected Saturable I Reactor With High Impedance Control Source. H. L. Goldstein, Bell Telephone Labs. (Re-presented for Discussion only)

FRI. (Continued)

9:00 A.M.

HOTEL STATLER
PENN TOP NORTH*Chairman:*
H. Sohn, University of
Pennsylvania*Sponsor:*
Basic Sciences Commit-
tee**BASIC SCIENCES**

- 59-12. Eddy-Current Losses in Solid and Laminated Iron. P. D. I Agarwal, University of Massachusetts.
- 59-235. Inductance of A-C Magnets From Simple Models. J. F. H. I Douglas and R. J. Voith, Marquette University.
- CP.* Electrospherics and Magnetospherics. A. D. Moore, University of Michigan.
- 59-227. The Use of Iterated Laplace Transformations in the Solution of Combined Circuit-Field Problems. J. H. Mulligan, Jr., New York University. I
- 59-228. Basic Concepts of Multidimensional Space Filters. G. Kron, I General Electric Co.
- CP59-18. A Modified Version and Demonstration of Routh's Stability Criteria. L. Pode, Sherman Oaks, California.
- 58-529. Electromechanical Impedance, Analogs and Duality. W. B. I Swift, University of Wisconsin. (Re-presented for Discussion only)

RAILROAD TRAFFIC CONTROL

- 59-252. Traffic Control For Railroads. G. W. Baughman, Westing- II house Air Brake Co.
- 59-251. Modern Systems of Traffic Control As Applied to Seaboard II Airline R.R. Co. J. R. DePriest, Seaboard Airline R.R. Co.
- 59-249. Communication Systems For Railway Traffic Control. H. C. II Sibley, General Railway Signal Co.
- CP59-250. Traffic Control on the New York Central System. J. W. Curran, New York Central System.

INDUSTRIAL CONTROL

- 58-1176. Elements of Reactor Controlled, Reversible Induction Motor II Drives. W. Leonhard, Westinghouse Electric Corp.
- CP59-84. Adjustable Speed Control of A.C. Motors. L. R. Foote, General Electric Co.
- CP.* A Transistorized Regulator for Battery Charging. L. W. Aiken, C & D Batteries Inc., R. C. Rasmuson, Hudson Valley Technical Institute, E. E. Moyer & R. J. Klein, Acme Electric Corp.

CHEMICAL PROCESSES AND PETROLEUM INDUSTRIES

- CP59-191. Variations Between The National Electrical And Canadian Electrical Codes On Hazardous Locations. K. V. Knudsen, Crouse Hinds Co. of Canada Ltd.
- CP.* Large Squirrel Cage Induction Motors For Refinery Service. G. St. Onge, Esso Research & Engineering Co.
- CP59-262. Repair, Reconditioning And Maintenance Of Explosion-Proof Electric Motors and Generators. J. Tindall, Reliance Electric & Engineering Co.

9:00 A.M.

HOTEL STATLER
SKYTOP*Chairman:*
T. C. Shedd, "Modern
Railroads"*Co-chairman:*
H. A. Scott, Railroad
Accessories Corp.*Sponsor:*
Land Transportation
Committee

9:00 A.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
A. H. Myles, Electric
Controller & Mfg. Co.*Sponsor:*
Industrial Control Com-
mittee

9:00 A.M.

HOTEL STATLER
TERRACE ROOM*Co-chairman:*
L. B. Eddy, Universal
Oil Products Co. and
A. J. Lehman, Free-
port Sulphur Co.*Sponsor:*
Petroleum and Chemical
Industry Committees**FRI. (Continued)**

9:00 A.M.

HOTEL STATLER
WEST ROOM*Chairman:*
H. F. May, Bell Tele-
phone Labs, Inc.*Sponsor:*
Communication Switch-
ing Systems Commit-
tee

9:00 A.M.

HOTEL STATLER
BALLROOM*Chairman:*
R. O. Decker, Westing-
house Electric Corp.*Sponsor:*
Feedback Control Sys-
tems Committee

9:00 A.M.

H'T'L GOV. CLINTON
CHELSEA ROOM*Chairman:*
R. L. Merrill, Battelle
Memorial Inst.*Sponsor:*
Electronics Committee**ELECTRONIC SWITCHING SYSTEMS—I**

- CP59-182. Considerations Pertaining to the Design of an Electronic Telephone Switching System. B. Brightman and M. P. Tubinis, Stromberg-Carlson Co.
- CP59-210. Transmission Aspects of an Electronic Switchboard Employing Time Division Multiplexing. J. C. Perkins, Stromberg-Carlson Co.
- CP.* An Experimental Switching System Using New Electronic Techniques. A. E. Joel, Jr., Bell Telephone Labs., Inc.
- CP.* Semiconductor Circuit Design Philosophy for the Central Control of an Electronic Switching System. B. J. Yokelson, W. B. Cagle and M. D. Underwood, Bell Telephone Labs., Inc.
- CP.* Fundamental Concepts in the Design of the Flying Spot Store. C. W. Hoover, R. E. Staehler and R. W. Ketchledge, Bell Telephone Labs., Inc.

FEEDBACK CONTROL SYSTEMS—I

- 59-220. Notes on Complex Conjugate Singularity Compensation and II Four Terminal Network Loading. P. Chandaket, Royal Thai Navy and A. B. Rosenstein, University of California.
- 59-219. Signal Stabilization of a Control System. R. Oldenburger, II Purdue University and C. C. Liu, Taylor Instrument Co.
- 59-199. Probabilistic Error As Measure of Control System Perform- II ance. J. Zaborsky, Washington University and J. W. Diesel, McDonnell Aircraft Corp.
- 58-1026. Relay Type Feedback Control Systems With Dead Time and II Sampling. K. Izawa, Purdue University and L. E. Weaver, University of Arizona. (Re-presented for Discussion only)
- CP58-89. Application of Switching Transistors and Saturable Reactors in a High-Performance Servo. F. B. Cox, Jr. and P. R. Johannessen, Massachusetts Inst. of Technology. (Re-presented for Discussion only)
- CP58-1269. Classified Bibliography on Feedback Control Systems Part I: Sampled-Data Systems. T. J. Higgins, University of Wisconsin and R. W. Greer, North American Aviation Corp.
- CP58-1270. Classified Bibliography on Feedback Control Systems Part II: Root Locus and Associated Procedures. T. J. Higgins, University of Wisconsin.
- CP.* Classified Bibliography on Feedback Control Systems Part III: Automatic Control of Nuclear Reactors. T. J. Higgins and R. F. Hill, University of Wisconsin.

RELIABILITY AND QUALITY CONTROL

- 59-144. Quality Assurance Program. R. A. Hulnick, H. G. Harding I and J. T. Rowinski, IBM Corp.
- 59-145. Effects of Operation of Germanium Alloy Junction Transistors I Above Rated Conditions. B. C. Spradlin, Battelle Memorial Institute.
- 59-36. Life Characteristics of Carbon-Film Resistors After 12,000 I Hours of Operation. H. Braner and J. L. Easterday, Battelle Memorial Institute.

FRI. (Continued)

9:00 A.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
S. R. Orem, The Ther-
mix Corp.*Sponsor:*
Electronics Committee**ELECTROSTATIC PROCESSES**

- CP.* Recent Progress in Automatic Energization of Electrical Precipitators. L. L. Little, Western Precipitation Corp.
- CP59-223. Saturable Reactor Control of Full-Wave and Bi-Phase Rectifiers. J. B. Thomas, Princeton Univ. and J. W. Drenning, Koppers Co.
- CP.* Sparkover as Influenced by Surface Conditions in D.C. Corona. G. W. Penney, S. E. Craig, Carnegie Inst. of Technology.
- CP59-234. Power Relationships and Temperature Dependence in the D-C Corona Field. J. B. Thomas, T. R. Williams and T. Suzuki, Princeton Univ.
- CP.* A Theory for Space Charge Limited Currents with Application to Electrical Precipitation. P. Cooperman, Univ. of Pittsburgh.
- 59-102. A Theoretical Analysis of the Effects of an Electric Field on the Charging of Fine Particles. A. T. Murphy, Univ. of Wichita, F. T. Adler and G. W. Penney, Carnegie Inst. of Technology. (Re-presented for Discussion only)
- 59-206. Field Strength Measurements in Parallel Plate Precipitators. I J. S. Lagarias, Koppers Co. Inc. (Re-presented for Discussion only)

9:00 A.M.

HOTEL McALPIN
EAST ROOM*Chairman:*
E. P. Smith, General
Electric Co.*Sponsor:*
Rotating Machinery
Committee**ROTATING MACHINERY**

- 58-1318. Computing Iron Losses in Fractional Horsepower Induction III Motor Design. C. E. Linkous, General Electric Co.
- 59-130. Stray Load Loss Measurement in Induction Machines. AIEE III Stray Load Loss Working Group. H. E. Jordan, Chairman.
- 59-45. Stray-Load Losses in Polyphase Induction Machines. P. L. III Alger, G. Angst and E. J. Davies, General Electric Co.
- 58-1180. A General Method for Slot Constant Calculation. K. J. III Waldschmidt, A. O. Smith Corp.
- 59-1. Characteristics of Induction Motors With Permanent Magnet III Excitation. J. F. H. Douglas, Marquette University.

9:00 A.M.

HOTEL McALPIN
RED ROOM*Chairman:*
D. W. Kitchin, Simplex
Wire and Cable Co.*Sponsor:*
Electrical Insulation
Committee**ELECTRICAL INSULATION**

- 59-75. Three Decades of Progress in Electrical Insulation. L. J. Berberich, Westinghouse Electric International Co.
- CP.* Magnesium Oxide Films as Magnetic Tape Insulation. M. Lauriente, Westinghouse Electric Corp.
- CP59-226. Glass Flake in Flexible Composite Insulation. M. P. Koerner, Jr., Owens-Corning Fiberglas Corp.
- CP.* A New Supported Silicone Rubber Insulation System. W. J. Bobear and J. S. Hurley, Jr., General Electric Co.
- 58-1208. The Present Status and Anticipated Progress in the Field of I Insulating Materials. T. D. Callinan, IBM Corp.

FRI. (Continued)

2:00 P.M.

HOTEL McALPIN
BALLROOM*Chairman:*
E. J. Merrell, Habirshaw
Cable and Wire Div.,
Phelps Dodge Copper
Products Corp.*Sponsor:*
Insulated Conductors
Committee**INSULATED CONDUCTORS**

- 58-305. The St. Lawrence River High Voltage Submarine Cable Crossing—Part II—Experimental Programme and Cable Manufacture. D. M. Farnham and S. H. Cunha, Quebec Hydro-Electric Power Commission; G. B. Shanklin, Schenectady, N. Y. H. D. Short, Canada Wire & Cable Co. (Re-presented for Discussion only)
- CP58-1353. The St. Lawrence River High Voltage Submarine Cable Crossing—Part III—Installation. D. M. Farnham and S. H. Cunha, Quebec Hydro-Electric Power Commission; G. B. Shanklin, Schenectady, N. Y.; H. D. Short, Canada Wire & Cable Co.
- CP58-1354. The St. Lawrence River High Voltage Submarine Cable Crossing—Part IV—Field Tests After Installation and Conclusion. D. M. Farnham and S. H. Cunha, Quebec Hydro-Electric Power Commission; G. B. Shanklin, Schenectady, N. Y.; H. D. Short, Canada Wire & Cable Co.

2:00 P.M.

HOTEL STATLER
PENN TOP SOUTH*Chairman:*
H. R. Armstrong, De-
troit Edison Co.*Sponsor:*
Protective Devices Com-
mittee**PROTECTIVE DEVICES**

- 59-68. A Report on Performance Characteristics of Lightning Arresters. Working Group of AIEE Lightning Protective Devices Subcommittee of The Protective Devices Committee. W. F. Griffard, Chairman.
- 59-50. New Current-Limiting Gap Extends Valve-Type Lightning-III Arrester Performance. J. W. Kalb and A. G. Yost, The Ohio Brass Co.
- 59-60. A New Electrical Research Laboratory. F. E. Andrews and III A. Vitkus, Hubbard and Co.
- 59-216. Lightning Arrester Field Test Equipment and Results. H. III Linck, The Hydro-Electric Power Commission of Ontario.
- CP.* Lightning Protection of Equipment on Multiple Line Buses. A. H. Knable, Allis-Chalmers Mfg. Co.
- CP.* A New Fuse Cutout. A. C. Westrom, Hubbard & Co.
- CP.* Surge Protection of Unit-Connected Generators. K. H. Chang and T. B. Thompson, Oklahoma State University.

2:00 P.M.

HOTEL McALPIN
RED ROOM*Chairman:*
D. Feldman, Bell Tele-
phone Labs.*Sponsor:*
Magnetic Amplifiers
Committee**MAGNETIC AMPLIFIERS**

- 59-170. Analysis of a Series-Connected Saturable Reactor With Ca- I pacitive Loading and Finite Control Resistance by the Use of Difference Equations. H. C. Bourne, University of California and J. T. Salih, Lenkurt Electric Co.
- 59-169. Graphical Analysis of the Full-Wave Magnetic Amplifier Con- I trol Characteristics Affected by Control Circuit Resistance. K. Murakami and T. Kikuchi, Tohoku University.
- 59-171. Analysis of Magnetic Amplifiers Without Diodes. P. R. Johan- I nessen, Massachusetts Inst. of Technology.
- 59-172. Analysis of Magnetic Amplifiers With Diodes. P. R. Johan- I nessen, Massachusetts Inst. of Technology.
- 59-173. Recommended Symbols for Magnetic Amplifier Papers, A Re- I port, Theory Subcommittee of AIEE Magnetic Amplifiers Committee, H. F. Storm, Chairman. (Re-presented for Discus- sion only)

FRI. (Continued)

2:00 P.M.

HOTEL STATLER
PENN TOP NORTH*Chairman:*
T. J. Higgins, University
of Wisconsin*Sponsor:*
Basic Sciences Commit-
tee**ELECTRIC CIRCUIT THEORY**

- 59-46. Current Distribution In The Cylindrical Source Plane-Electrode Configuration. W. D. Comstock, Syracuse University Research Corp. and E. M. Williams, Carnegie Inst. of Technology.
- CP59-111. Capacitance Of Parallel Rectangular Cylinders. J. D. Horgan, Marquette Univ.
- CP.* Transient Solution of Systems By Multiple Z Transforms. T. J. Higgins & M. Chen, Univ. of Wisconsin.
- 59-266. The Characteristic Impedance and Phase Velocity Of A Shielded Helical Transmission Line. H. S. Kirschbaum, Battelle Memorial Inst.
- 59-16. The Optimum Transmission-Line Pulse Transformer. F. J. Young, E. R. Schatz and J. G. Woodford, Carnegie Inst. of Technology.
- 59-15. The Transient Response of Tapered Transmission Lines. F. J. Young, E. R. Schatz and J. B. Woodford, Carnegie Inst. of Technology.
- 59-264. Spectral Output Of Piecewise Linear Nonlinearity. O. J. M. Smith, Univ. of California.
- 59-265. Statistical Spectral Output Of Power Law Nonlinearity. I O. J. M. Smith, Univ. of California.

2:00 P.M.

HOTEL STATLER
SKYTOP*Chairman:*
J. C. Aydelott, General
Electric Co.*Co-chairman:*
G. J. Sennhauser, C&O
Railroad*Sponsor:*
Land Transportation
Committee**RAILROAD ROLLING STOCK**

- CP59-245. A Full-Range Two-In-One (Diesel-Electric, Third-Rail) Locomotive. B. H. Hefner, General Motors Corp.
- CP59-248. Prototype Alternating-Current Multiple-Unit Train of the Pennsylvania Railroad. K. H. Gordon, The Pennsylvania Railroad Co.; V. F. Dowden, The Budd Co.; E. W. Ames, Westinghouse Electric Corp.
- CP59-246. Control for an 8500-HP Gas Turbine-Electric Locomotive. R. M. Smith and W. B. Zelina, General Electric Co.

2:00 P.M.

HOTEL McALPIN
COLONIAL ROOM*Chairman:*
J. W. Picking, Reliance
Electric and Engineer-
ing Co.*Sponsor:*
Industrial Control Com-
mittee**INDUSTRIAL CONTROL**

- 58-1166. The Application of Shift Register Techniques to Materials Handling. H. C. Diener, Jr., Westinghouse Electric Corp.
- 59-91. New Methods of Simplifying Boolean Functions. R. L. Howard, Westinghouse Electric Corp.
- CP58-1284. Logic Design Techniques of Static Switching Control for Transfer Machines. J. W. Stuart, Industrial Nucleonics Corp. and R. A. Manning, Westinghouse Electric Corp.
- 58-1285. Static Control in Automatic Warehousing. L. L. Bosch, A. J. Fanthorp, Bosch & LaTour; J. W. Stuart, Industrial Nucleonics Corporation. (Re-presented for Discussion only)

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FRI. (Continued)

2:00 P.M.

H'T'L GOV. CLINTON
GOVERNOR ROOM*Chairman:*
J. A. Smith, General
Electric Co.*Sponsor:*
Substations and Switch-
gear Committees**SUBSTATIONS AND SWITCHGEAR**

- 59-238. Design Features of 40,000 KVA Underground Distributing III Station. C. M. Short and F. C. Osborn, Los Angeles Dept. of Water and Power.
- 59-42. Large Metropolitan Distribution Substations. T. D. Reimers, III Consolidated Edison Co. of N. Y., Inc.
- CP59-202. Lombard 66-13.2 KV Substation in Central Philadelphia. J. A. Krawchuk, Philadelphia Electric Co.
- CP.* New 13.8 KV 1000 MVA Air Magnetic-Type Power Circuit Breaker With Stored Energy Operating Mechanism in Metal-Clad Switchgear. R. M. Korte, W. T. Sharp and R. E. McDaniel, General Electric Co.

2:00 P.M.

HOTEL STATLER
TERRACE ROOM*Co-chairman:*
L. B. Eddy, Universal Oil
Products Co. and A.
J. Lehman, Freeport
Sulphur Co.*Sponsor:*
Petroleum and Chemical
Industry Committees**CHEMICAL PROCESSES AND PETROLEUM INDUSTRIES**

- CP.* The Use Of Aluminum Conduit In Industrial and Chemical Plants. E. G. Fox, Kaiser Aluminum and Chemical Sales Inc.
- CP.* The Development Of Reliable Electrical Systems In Petroleum Refineries. J. C. Howard, Standard Oil of Indiana.
- Group Dynamics Discussion On Designing For Reliability Of Power Systems. Discussion Leader L. B. Eddy.

2:00 P.M.

HOTEL STATLER
GOLD BALLROOM*Chairman:*
F. D. Reese, General
Tel. Service Corp.*Sponsor:*
Communication Switch-
ing Systems Commit-
tee**ELECTRONIC SWITCHING SYSTEMS—II**

- CP.* A High Speed Barrier Grid Store. T. S. Greenwood and R. E. Staehler, Bell Telephone Labs., Inc.
- CP.* Application of Breakdown Devices to Large Multistage Switching Networks. T. Feldman and J. W. Rieke, Bell Telephone Labs., Inc.
- CP.* A High Speed Line Scanner For Use In An Electronic Switching System. A. Feiner and L. F. Goeller, Bell Telephone Labs., Inc.
- CP.* A Signal Distributor For Electronic Switching Systems. L. Freimanis, Bell Telephone Labs., Inc.
- CP.* Functional Design of a Stored Program Electronic Switching System. H. N. Seckler and J. J. Yostpille, Bell Telephone Labs., Inc.

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FRI. (Continued)

2:00 P.M.

HOTEL STATLER
BALLROOM**Chairman:**R. T. Byerly, Westing-
house Electric Corp.**Sponsor:**Feedback Control Sys-
tems Committee**FEEDBACK CONTROL SYSTEMS—II**

- 59-197. Effect of Closed-Loop Transfer Function Pole and Zero
II Locations on the Transient Response of Linear Control Sys-
tems. O. I. Elgerd, University of Florida and W. C. Stephens,
U.S. Army Combat Surveillance Agency.
- 59-255. Evaluation of Transient System Response. F. P. de Mello,
II General Electric Co.
- 59-198. The Optimum Control of Multi-Actuator Systems. I. McCaus-
II land, University of Toronto.
- 59-214. The Linear Least Squares Synthesis of Multivariable Control
Systems. R. C. Amara, Stanford Research Institute.
- 58-796. Transfer Functions of Loaded Synchronous Machine. D. Hamdi-
II Sepen, Technical University of Istanbul. (Re-presented for
Discussion only)
- 58-1083. Application of Continuous System Design Concepts to the
II Design of Sampled Data Systems. S. F. Schmidt, Ames Aero-
nautical Lab. (Re-presented for Discussion only)
- CP.* Classified Bibliography on Feedback Control Systems: Part
IV, Obtaining Transient Response from Frequency Response.
T. J. Higgins, University of Wisconsin.
- CP.* Classified Bibliography on Feedback Control Systems: Part
V, Obtaining Frequency Response from Transient Response.
T. J. Higgins, University of Wisconsin.
- CP.* Classified Bibliography on Feedback Control Systems: Part
VI, Time-Lag Systems. T. J. Higgins, University of Wisconsin.
- CP.* Classified Bibliography on Feedback Control Systems: Part
VII, Stability Theory. T. J. Higgins, University of Wisconsin.

ENGINEERING SCIENCE AND THE DEMANDS OF INDUSTRY

Panel Members are:

- CP.* H. W. Gouldthorpe, General Electric Co.
- CP.* S. Seely, Case Inst. of Technology
- CP.* D. B. Sinclair, General Radio Co.
- CP.* H. H. Skilling, Stamford Univ.

Moderator: CP.* D. K. Reynolds, Seattle University

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 re-
production in any form by the Institute.

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

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

2:00 P.M.

HOTEL STATLER
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D. E. Winslow—Hotel Accommodations
T. C. Oliver—Registration
H. G. Koch—Inspection Trips
Arvin Grabel—Monitors
D. Halloran—Smoker
E. J. Doyle—Dinner-Dance
Mrs. D. M. Quick—Ladies Committee

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 Mrs. Sidney Friend, Jr. Mrs. W. G. Vieth
 Mrs. R. W. Gillette Mrs. R. A. Webb
 Mrs. A. H. Gould Mrs. R. T. Weil
 Mrs. R. H. Hainsworth Mrs. D. E. Winslow

COMMITTEE MEETINGS

MONDAY, FEBRUARY 2nd

9:00 A.M.

PARLOR D**	Radio Noise and TV Interference from HV Trans. Lines Working Group
DALLAS ROOM	Electronic and HF Instruments
PARLOR C*	Industrial and Commercial Power Systems Executive
BUFFALO ROOM	Nominating
TOWN ROOM	Registration of Engineers
VILLAGE ROOM	Public Relations
HARTFORD ROOM	Professional Conduct
EMPIRE SUITE I	Periodicals and Transactions
EMPIRE SUITE II	Educational Publications

10:00 A.M.

PARLOR E**	Subcommittee 14 of ASA Sectional C42
DARTMOUTH ROOM	Sections
SCHUYLER ROOM	Members for Life Fund

12:00 NOON

PARLOR F*	Luncheon—Frequency Range Transformer W.G.
PARLOR E*	Luncheon—1 and C.P.S. Codes and Standards Subcommittee
PENNSYLVANIA ROOM	Luncheon—General Session
DARTMOUTH ROOM	Luncheon—Sections
CORNELL ROOM	Luncheon—Insulation Application Conference
PARLOR D*	Luncheon—Radio Communication Systems

12:30 P.M.

EMPIRE SUITE I	Luncheon—TV and Aural Broadcasting
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4:00 P.M.

BUFFALO ROOM	Induction and Dielectric Heating Subcommittee
DARTMOUTH ROOM	Digital Computer Subcommittee
PARLOR C*	Special Publications Committee
AIEE ROOM 1001***	Analog Computer Subcommittee
BOSTON ROOM	Cathodic Protection Subcommittee
PARLOR D*	TOD Manual Subcommittee
TOWN ROOM	Management
PARLOR D**	Electric Welding
VILLAGE ROOM	Effects of Radiation on Insulation Subcommittee

COMMITTEE MEETINGS (Continued)

4:00 P.M.

AIEE Towers, Poles and Conductors Subcommittee
Electric Systems for Commercial Buildings Subcommittees
Data Communication
Analog—Digital Converters Subcommittee
Textile Subcommittee's Standards Panel
TV and Aural Broadcasting Systems
R. M. Noise Evaluation W. G.
Electronics Committee

5:30 P.M.

Sections Get-Together

7:00 P.M.

Computing Devices

TUESDAY, FEBRUARY 3rd

7:30 A.M.

Canadian Breakfast

9:00 A.M.

Student Branches
M. A. Performance—Core Test Correlation W.G.
General Industry Applications
Program Committee, AIEE-ASME National Power Conference
Insulation Subcommittee of R.M.
General Systems Subcommittee
Computer Application Subcommittee
System Operations Subcommittee
TOD Subcommittee on AIEE Place in Engrg. Field
Automatic and Supervisory Systems Subcommittee
Telegraph Systems Committee
System Economics Subcommittee
Distribution Substations Subcommittee
Techniques for Dielectric Tests Subcommittee
T & D Distribution Subcommittee
Thermal Evaluation of Mica Working Group

9:30 A.M.

Lamme Medal Committee
Section Representatives

12:00 NOON

Luncheon—Substation W.G. Project 57.1
Substation W. G. Project 57.2
Substation W.G. Project 56.3
Luncheon—Pulse Transformer W.G.
Luncheon—Special Instruments and Auxiliary Apparatus
Luncheon—Education
Luncheon—System Engineering Administrative

PARLOR E*
DALLAS ROOM
EMPIRE SUITE I
PARLOR E**
EMPIRE SUITE II
PARLOR F*
SCHUYLER ROOM
HARTFORD ROOM

CORNELL AND
PENNSYLVANIA
ROOMS

TOWN ROOM

PENNA. AND
CORNELL ROOMS

PENNSYLVANIA RM.
PARLOR D**
SCHUYLER ROOM
PARLOR E*
BOSTON ROOM
CORNELL ROOM
PARLOR C*
DARTMOUTH ROOM
TOWN ROOM
EMPIRE SUITE II
BUFFALO ROOM
DALLAS ROOM
VILLAGE ROOM
EMPIRE SUITE I
PARLOR F*
PARLOR D*

HARTFORD ROOM
PENN TOP NORTH

PARLOR F*
PARLOR D*
PARLOR E*
BOSTON ROOM
TOWN ROOM
EMPIRE SUITE I
CORNELL ROOM

PARLOR C*
PARLOR E**

GEORGIAN ROOM

AIEE BOARD RM.***

PENN TOP NORTH
ALCOA STATLER SUITE
BUFFALO ROOM
CORNELL ROOM
VILLAGE ROOM
PENNSYLVANIA RM.
EMPIRE SUITE I
PARLOR D**
EMPIRE SUITE II
DALLAS ROOM
SCHUYLER ROOM
HARTFORD ROOM
PARLOR C*

PARLOR D*

PARLOR F*
PARLOR E**
TOWN ROOM
ASCE BOARD RM.***
PARLOR E*
ROOM 1105***
DALLAS ROOM
EMPIRE SUITE II
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PENNSYLVANIA RM.
SCHUYLER ROOM
HARTFORD ROOM
BOSTON ROOM
DARTMOUTH ROOM
CORNELL ROOM
PARLOR D**
AIEE ROOM 1001***
PARLOR C*

12:30 P.M.

Communication Division
Controls Subcommittee of S.E.

1:15 P.M.

Gas Insulation Subcommittee

1:30 P.M.

Program Committee, AIEE-ASME National Power Conference

2:00 P.M.

Section Representatives
75th Anniversary
Research Committee
System Engineering
Transfers Committee
Student Branches
Industrial Power Rectifiers Administrative Subcommittee
Semi Conductor Special Applications W.G.
Conversion Substation Subcommittee
Evaluation of Form Wound Coil Insulation W.G.
Transmission Substation
Recognition Awards
Communication Division

4:00 P.M.

Basic Sciences

WEDNESDAY, FEBRUARY 4th

9:00 A.M.

Relays Committee
Administration Dept.
Nuclear Congress and Nucleonic Committee
Power Division
Cement Industry Subcommittee
Constitution and By-Laws
Industry Division
Communication Theory Committee
R. M. Synchronous Machinery Subcommittee
Application of Probability Methods Subcommittee
Substations Committee Round Table
Feedback Control Systems Components Specification Subcommittee
Electric Systems for Commercial Buildings
Professional Development and Recognition Department
Electric Power Distribution for Industrial Plants
Science and Electronics Division
Excitation Systems Subcommittee
Rotating Machinery Insulation W.G.
Nuclear Power Subcommittee

VILLAGE ROOM

DARTMOUTH ROOM
EMPIRE SUITE II
CORNELL ROOM
PARLOR D*
TOWN ROOM
VILLAGE ROOM
EMPIRE SUITE I
BUFFALO ROOM
PARLOR E*
PENNSYLVANIA RM.
BOSTON ROOM
PARLOR C*
PARLOR F*
SCHUYLER ROOM

DALLAS ROOM
SCHUYLER ROOM
PARLOR C*
DARTMOUTH ROOM
PARLOR D**
PARLOR D*
CORNELL ROOM
BUFFALO ROOM
ROOM 1001***
HARTFORD ROOM
PARLOR F*
EMPIRE SUITE II
VILLAGE ROOM
EMPIRE SUITE I
TOWN ROOM

PENNSYLVANIA RM.
ASCE BOARD RM.***

PARLOR E*
DALLAS ROOM
PARLOR C*
ROOM 1105***

PARLOR F*

GEORGIAN ROOM

9:30 A.M.

Finance Subcommittee

12:00 NOON

Luncheon—Metal Industry
Luncheon—Power Transformer and Inductor W.G.
Luncheon—Production and Application of Light
Luncheon—Characteristics of Loads Subcommittee
Luncheon—A.S.A. C57
Luncheon—Research Committee
Luncheon—General Applications Division
Luncheon—Substation Executive Subcommittee
Luncheon—Membership Material Subcommittee
Luncheon—John Fritz Medal Award
Luncheon—Industrial Power Rectifiers
Luncheon—Indicating and Integrating Instruments
Luncheon—Election Tube Subcommittee
Luncheon—Induction Machinery Subcommittee

2:00 P.M.

Membership Committee
TOD Representatives
Automation and Data Processing
Chemical Industry
Magnetic Amplifiers Applications Subcommittee
Insulated Conductors Administration Subcommittee
Publications Department
Substation Committee Business Meeting
Electronic Circuits and Systems
Feedback Control Systems Committee
Power Generation Committee
Telephone Line Protection Subcommittee
Methods of Measurements Subcommittee
General Applications Division
A.S.A. C57

2:30 P.M.

Industrial and Commercial Power Systems
Lightning and Insulator Subcommittee

4:00 P.M.

Capacitor Subcommittee of T & D
Electrical Insulation
Coordinating Committee #4
R. M. Administrative Subcommittee

4:30 P.M.

Wire Communications Systems

7:30 P.M.

Forum of Technical Committee Chairmen

EMPIRE SUITE II
PARLOR D**
DARTMOUTH ROOM
PENNSYLVANIA RM.
EMPIRE SUITE I
BUFFALO ROOM
BOSTON ROOM
DALLAS ROOM
PARLOR C*
SCHUYLER ROOM
VILLAGE ROOM
PARLOR D*
PARLOR F*
PARLOR E*

PARLOR F*

BUFFALO ROOM
PARLOR D*
CORNELL ROOM
BOSTON ROOM

EMPIRE SUITE II
TOWN ROOM
DARTMOUTH ROOM
PARLOR F*
EMPIRE SUITE I
PENNSYLVANIA RM.
BUFFALO ROOM
CORNELL ROOM
VILLAGE ROOM
PARLOR E*
BOSTON ROOM

EMPIRE SUITE II
HARTFORD ROOM
PARLOR C*
SCHUYLER ROOM
VILLAGE ROOM

ENGINEERS CLUB

THURSDAY FEBRUARY 5th

9:00 A.M.

ASA Comm. on Standard C.12 Watthour Meters
M. A. Materials Subcommittee
Vice-President's Conference
Technical Operations Department
M.A. Theory Subcommittee
Lightning Protective Devices Subcommittee
Flexible Sheet Materials W.G.
Power System Communications
Semiconductor Electrochemical Standards W.G.
Admission and Advancement Department
Soil Thermal Resistivity Subcommittee, No. 14
W.G. Hermetic Motor Insulation Materials Evaluation
W.G. Hermetic Motor Insulation Systems Evaluation
Task Force on Application Guide—Switchgear

11:30 A.M.

Working Groups on Hermetic Motor Insulation Materials and
Sys. Eval.

12:00 NOON

Luncheon—Domestic and Commercial Applications
Luncheon—Rotating Machinery D-C Subcommittee
Luncheon—Technical Operations Department
Luncheon—Chemical Processes Subcommittee

2:00 P.M.

ASA Com. on Standard C12 Watthour Meters
Semiconductor Metallic Rectifiers
Vice-President's Conference
Telemetry Committee
Fault Limiting Devices Subcommittee
Transmission & Distribution
Domestic and Commercial Applications
Magnetic Amplifiers Committee
Industrial Control Committee
Task Force on Application Guide—Switchgear
Planning and Coordination

4:00 P.M.

Land Transportation
Effects of Corona on Insulation Subcommittee
Rotating Machinery
E.I. Technical Information Subcommittee
Communication Switching Systems

5:30 P.M.

Dinner—Cornell Society of Engineers

CORNELL ROOM
TOWN ROOM
PARLOR C*
BOSTON ROOM

VILLAGE ROOM

PENNSYLVANIA RM.

BUFFALO ROOM

CORNELL ROOM
PARLOR C*

FRIDAY, FEBRUARY 6th

9:00 A.M.

Board of Directors
Safety Committee
Ground Resistance and Potential Gradient Measurements
Protective Devices

9:00 A.M.

Fundamental Standards Subcommittee

12:00 NOON

Board of Directors Luncheon

1:00 P.M.

Luncheon—Electrostatic Processes Subcommittee

2:00 P.M.

Board of Directors
Ground Resistance and Potential Gradient Measurements

- * Committee meetings at the Sheraton-McAlpin Hotel
- ** Committee meetings at the Gov. Clinton Hotel
- *** Committee meetings at the Engineering Societies Building

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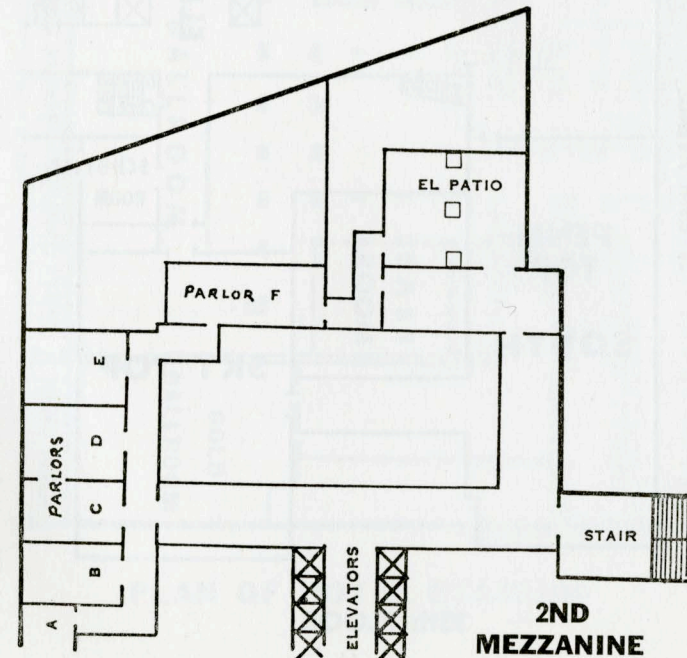
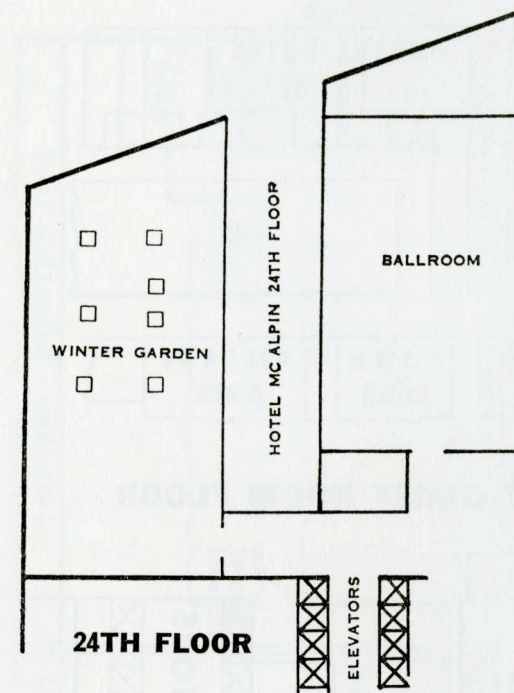
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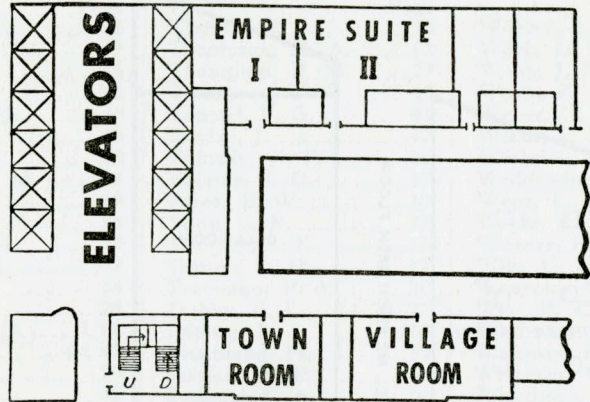
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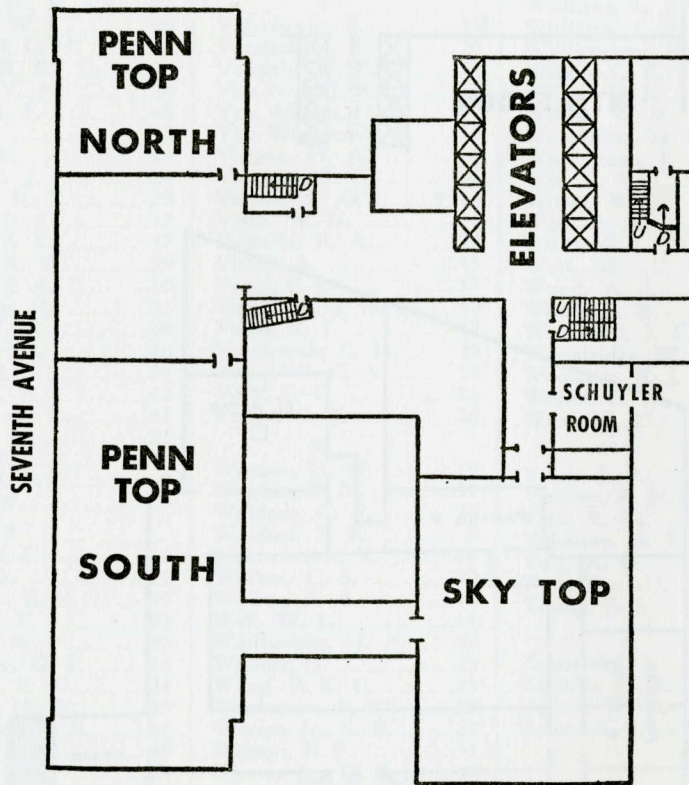
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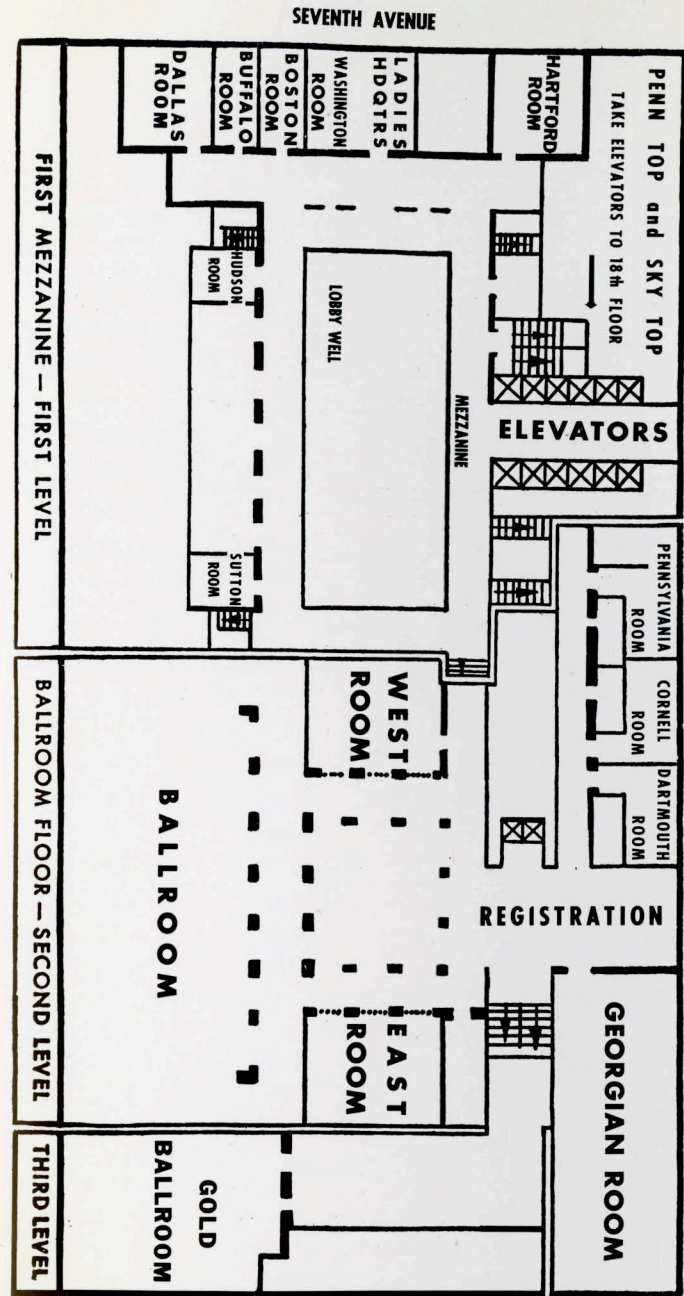
HOTEL STATLER



FIRST GUEST ROOM FLOOR



18th FLOOR



PLAN OF HOTEL STATLER

SHELTERED PASSAGEWAYS BETWEEN BUILDINGS

