



AMERICAN INSTITUTE *of* ELECTRICAL ENGINEERS

1958 FALL GENERAL MEETING

Scheduled for Pittsburgh, Pa.

October 26-31, 1958

CANCELLED

Hotel Strike Unsettled

Transaction Papers will appear in Bimonthlies on schedule

DISCUSSION INVITED BY MAIL

Closing Date December 1, 1958

Numbered Conference Papers available by mail order

COMMITTEE MEETINGS AT CALL OF CHAIRMEN

33 West 39th Street, New York

October 15, 1958

By action of the
EXECUTIVE COMMITTEE
N. S. Hibshman, *Secretary*

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS



FALL GENERAL MEETING

GATEWAY
TO THE FUTURE



PITTSBURGH BICENTENNIAL 1958-59

**PITTSBURGH, PENNSYLVANIA
OCTOBER 26-31, 1958**

PENN-SHERATON HOTEL

GENERAL INFORMATION

This is the first opportunity Pittsburgh has had to entertain the membership of the Institute at the Fall General Meeting. The Members of the Pittsburgh Section extend a warm welcome and trust you will be interested and stimulated by the weeks events. Your attention is directed to details elsewhere in this Program regarding the Welcome Tea, General Session and Luncheons.

Registration Fees Required. In accordance with the policy set up by the Board of Directors, a registration fee of \$5.00 has been established for members and a fee of \$8.00 for nonmembers. This is to help make the meeting self-supporting. Student members and the immediate families of members will not be 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 registration 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 left with the Chairman and/or sent to Edward C. Day, Assistant Secretary, Technical Operations Department, AIEE, 33 West 39th Street, New York 18, New York, before November 14, 1958. 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 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 each for nonmembers). Only numbered papers are available. Mail orders, particularly from out-of-town members, are advisable inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon Books in \$10.00 denominations are available for those who wish to avoid remittance by check or otherwise. 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.

NOTE: Paper sales will be conducted in Parlor "D" on the 17th floor.

SCHEDULE OF EVENTS

SUNDAY—OCT. 26

4:00 P.M.

Welcome Tea

4:00 P.M.

Registration

MONDAY—OCT. 27

9:00 A.M.

Data Communication

Nuclear Instrumentation and Control

Management

Research

Mining Industry

Ladies Coffee Hour

General Session

Ladies Tour of Alcoa Building and tea

2:00 P.M.

3:00 P.M.

TUESDAY—OCT. 28

9:00 A.M.

Communication Switching Systems

Switching Surges

The Young Engineers in the Power Industry

Feedback Control Systems for Metal Rolling and Processing

Emergency Operation of Industrial Plant Power Systems

Semiconductor Switching Devices—I

Mining Industry

Safety

Trip to Irvin Works, U. S. Steel Corp.

Ladies Tour to Longue Vue Country Club

Luncheon—Pittsburgh Redevelopment and Bicentennial

Trip to Westinghouse Elec. Corp. East Pittsburgh Works (Tour A)

Trip to Westinghouse Elec. Corp.—Atomic Power Dept. (Tour B)

Transmission and Distribution

Theory and Practice of Reactor Control

Characteristics of Loads

Semiconductor Switching Devices—II

Electric Systems for Metal Rolling and Processing

Computer Application in Power Systems

The Motivation Multiplier in Electrical Engineering Education

Automation in the Soviet Union

11:30 A.M.

12:00 Noon

1:00 P.M.

1:00 P.M.

2:00 P.M.

8:00 P.M.

WED.—OCT. 29

8:30 A.M.

9:00 A.M.

Trip to Shippingport Atomic Power Station

Communication Theory

Drive Systems for Reversing Hot Mills

Rotating Machinery and Relays

Automation of Classification Yards

Feedback Control Systems—I

Nuclear Power Plants—I

Transmission and Distribution

Electronic Circuits—I

12:30 P.M.

Ladies Bridge—Luncheon

2:00 P.M.

Communication in Space

Rotating Machinery

Land Transportation

Relays and Transmission and Distribution

Insulated Conductors

Power System Communications

Electronic Circuits—II

7:30 P.M.

Golden Triangle Frolics

THURS.—OCT. 30

9:00 A.M.

Radio Communication Systems

Rotating Machinery

Power System Operation—Dispatching and Personnel

Industrial Control

Substations

Nuclear Power Plants—II

Magnetic Amplifiers

Computers in Control Systems

Electrical Insulation

Trip to U. S. Steel Corp., Research Center

12:00 Noon

Luncheon—Research in the Pittsburgh Area, Presentation of Fritz Medal

1:00 P.M.

Ladies Tour to University of Pittsburgh

1:00 P.M.

Trip to Aluminum Company of America Research Laboratories

2:00 P.M.

Radio Communication Systems

Rotating Machinery

Power System Planning and Operating

Substations

Nuclear Power Plants—III

Feedback Control Systems—II

Automatic Programming of Digital Computers for Engineering and Data Processing

FRIDAY—OCT. 31

9:00 A.M.

Rotating Machinery

Transformers

Switchgear

Lightning Protection of Equipment

Training in Communications

Symposium on Conventional and Unit-Type Substations in Distribution Systems

Power Systems Operations—Maintenance Costs

Trip to Westinghouse Research Laboratory

1:00 P.M.

Trip to Pennsylvania Railroad—Conway Yard

2:00 P.M.

Rotating Machinery

Transformers

Switchgear

Computers in Nuclear Systems

Electrical Insulation

TECHNICAL PROGRAM

MONDAY—OCT. 27

9:00 A.M.

MONONGAHELA ROOM

Chairman:
A. E. Frost, Western Union Telegraph Co.

Sponsor:
Data Communication Committee

DATA COMMUNICATION

- 58-1181. Optimum Block Length for Data Transmission with Error Checking. F. B. Wood, International Business Machines Corp.
- 58-1240. Assessment Effects of Delay Distortion in Data Systems. I A. D. Fowler and R. A. Gibby, Bell Telephone Labs., Inc.
- CP58-1241. Measurements 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., Inc.
- 58-1204. An FM Digital Subset for Data Transmission Over Telephone Lines. L. A. Weber, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-300. Synchronized Clocks for Data Transmission. J. O. Edson, I M. A. Flavin and A. D. Perry, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-302. SAGE Data System Considerations. R. G. Enticknap, Massachusetts Institute of Technology and E. F. Schuster, Western Electric Co., Inc. (Re-presented for Discussion only)
- 58-407. SAGE Data Terminals. R. O. Soffel and E. G. Spack, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 58-332. Communication Channels for SAGE Data Systems. R. T. I James, American Telephone & Telegraph Co. (Re-presented for Discussion only)

9:00 A.M.

BALLROOM

Chairman:
M. A. Schultz, Westinghouse Electric Corp.

Sponsor:
Nucleonic and Radiation Instrumentation Committee

NUCLEAR INSTRUMENTATION AND CONTROL

- CP58-1257. Coolant Instrumentation for Pressurized Water Reactor Power Plants. J. J. Lihota and C. B. Hoppa, Westinghouse Electric Corp.
- CP58-1319. A Rod Position Indication System for Pressurized Reactors. R. C. Floyd and J. F. Reuther, Westinghouse Electric Corp.
- 58-1329. The Design of A Pile Oscillator for the Ford Nuclear Reactor. J. Stone and W. Kerr, University of Michigan. (Re-presented for Discussion only.)
- CP.* Systems Design and Instrumentation of WTR In-Pile Test Loops. M. A. Vogel, Westinghouse Electric Corp.
- CP.* Instrumentation and Control System for the WTR Critical Experiments. F. L. Kelly, Westinghouse Electric Corp.

9:00 A.M.

TERRACE ROOM

Chairman:
H. P. Kiphuth, Westinghouse Electric Corp.

Sponsor:
Management Committee

MANAGEMENT

- CP.* Work Measurement For The Engineer And For Management. J. F. McQuillin, West Penn Power Co.
- CP.* Work Simplification In A Public Utility. A. Antonette, Detroit Edison Co.

MON. (Continued)

9:00 A.M.

URBAN ROOM

Chairman:
W. M. Leeds, Westinghouse Electric Corp.

Sponsor:
Research Committee

9:00 A.M.

ALLEGHENY ROOM

Chairman:
A. C. Lordi, Westinghouse Electric Corp.

Sponsor:
Mining Industry Committee

2:00 P.M.

BALLROOM

Chairman:
A. A. Johnson, Chairman 1958 Fall General Meeting

RESEARCH

- CP58-1145. Managing Research Laboratory Finances. T. M. Linville and C. S. Van Wormer, General Electric Co.
- 58-1153. Electrical Insulation Research in a Power Utility—A Programme for Profit. A. W. W. Cameron, The Hydro-Electric Power Commission of Ontario.
- CP58-1242. Two Examples of Industrial Research in France Relating to the Transmission of Electrical Energy. F. M. Cahen and R. A. Tellier, Electricite De France.

MINING INDUSTRY

- CP.* The Above Ground Substation and Underground Portable Switchhouse for A.C. Mining. D. E. Hamilton, General Electric Co.
- CP.* The Underground Mine Power Center for A.C. Mining. V. H. Youel, Westinghouse Electric Corp.
- CP.* Underground Cable Choice and Installation for A.C. Mining. T. R. Weichel, Okonite Co.
- CP.* Safety Distribution Centers for A.C. Mining. G. P. Benish, MINING.

GENERAL SESSION

- “Greetings from Pittsburgh Section”—W. R. Harris, Chairman
- “Address of Welcome”—The Honorable David L. Lawrence, Mayor of Pittsburgh
- “Response and Address”—President L. F. Hickernell
- “Presentation of The AIEE Education Medal”
- 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. Hickernell
- Response of the Medalist. Professor John F. Calvert, Head, Electrical Engineering Department, University of Pittsburgh
- Address—“Industry and the Atom Today” J. K. Hodnette, Executive Vice-President, Westinghouse Electric Corp.

TUESDAY—OCT. 28

9:00 A.M.

ALLEGHENY ROOM*Chairman:*

D. L. Solomon, U. S. Army Signal Communications Engineering Agency

Sponsor:

Communication Switching Systems Committee

9:00 A.M.

URBAN ROOM*Chairman:*

J. K. Dillard, Westinghouse Electric Corp.

Sponsor:

Transmission and Distribution Committee

9:00 A.M.

BALLROOM*Chairman:*

J. F. Calvert, University of Pittsburgh

Sponsor:

Power Generation Committee

COMMUNICATION SWITCHING SYSTEMS

58-1243. A New Small Crossbar Telephone System For Private I Branch Exchanges. H. H. Abbott, Bell Telephone Labs., Inc.

CP.* Restricters For Direct Distance Dialing. C. W. Freeman, North Electric Co.

CP58-1244. Mobile Telephone Switching Equipment. L. F. Bernhard, Illinois Bell Telephone Co. and E. N. Duff, Michigan Bell Telephone Co.

58-1245. Optimal Utilization And Extension of Interoffice Trunking I Facilities. R. E. Kalaba and M. L. Juncosa, The Rand Corp. (Re-presented for Discussion only)

58-1246. Mechanization of Toll Switching at Providence, Rhode I Island. C. W. Anderson and H. N. Thornton, New England Telephone & Telegraph Co. (Re-presented for Discussion only)

SWITCHING SURGES

CP.* Switching Surges on High Voltage Systems—Progress Report. AIEE Working Group on Switching Surges.

CP58-1247. Switching Surge Voltages Due to the Interruption of Transformer Magnetizing Current. A. K. Amchin, American Electric Power Service Corp. and R. T. Curto, The Detroit Edison Co.

58-1185. Overvoltages Following Secondary Switching of Transformers III Connected to High Voltage Lines. L. O. Barthold, I. B. Johnson and A. J. Schultz, General Electric Co.

58-1216. Transmission Line Switching Surges as Modified by Transformer Impedances and Arrester Operation. D. F. Shankle and E. R. Taylor, Jr., Westinghouse Electric Corp.

58-1178. Magnification of Switching Surges. A. J. Schultz, I. B. III Johnson and N. R. Schultz, General Electric Co.

THE YOUNG ENGINEERS IN THE POWER INDUSTRY

CP58-1146. The Young Electrical Engineer in a Small Public Utility Company. H. W. Evers, 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 Co., C. F. Paulus, Cleveland Electric Illuminating Co., and R. L. Webb, Consolidated Edison Co. of N. Y., Inc.

TUES. (Continued)

9:00 A.M.

MONONGAHELA ROOM*Chairman:*

W. E. Coleman, U. S. Steel Corp.

Sponsor:

Feedback Control Systems and Metal Industry Committees

9:00 A.M.

FORT DUQUESNE ROOM*Chairman:*

R. A. Zimmerman, Westinghouse Electric Corp.

Sponsor:

Industrial and Commercial Power Systems Committee

9:00 A.M.

BELL TELEPHONE AUDITORIUM*Chairman:*

H. W. Henkels, Westinghouse Electric Corp.

Sponsor:

Solid State Devices and Semiconductor Metallic Rectifiers Committees

9:00 A.M.

TERRACE ROOM*Chairman:*

J. A. Dunn, Island Creek Coal Co.

Sponsor:

Mining Industry Committee

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.

CP.* The Use of Frequency Response Tests in the Analysis of A Foil Mill Automatic Gauge Control. R. M. Sills, General Electric Co.

CP.* Simulation of Steel Mill Control Systems. R. A. Phillips, General Electric Co.

CP.* Hot Strip Mill Gage Control. O. C. Gochenour, Jones & Laughlin Steel Corp.

EMERGENCY OPERATION OF INDUSTRIAL PLANT POWER SYSTEMS

CP.* The Development of Reliable Electrical Systems in Petroleum Refineries. J. C. Howard, Standard Oil Co. of Indiana.

CP.* Role of Modern Switchgear in Preventing and Coping with Operating Emergencies. W. P. Burt and W. A. Fleishli, General Electric Co.

CP58-1250. A Power System Designed for Reliability and Emergency Operation. R. Loewe, Argonne National Lab.

58-1188. High Capacity Current Limiting Fuses Today. E. M. Fitzgerald and V. N. Stewart, General Electric Co. (Re-presented for Discussion only)

SEMICONDUCTOR SWITCHING DEVICES—I

58-1249. Theory of Transient Build-up In Avalanche Transistors. I W. Shockley and J. Gibbons, Shockley Semiconductor Labs.

CP.* PNP Switches. J. M. Goldey, Bell Telephone Labs., Inc.

CP.* Germanium PNP Switches. I. A. Lesk, General Electric Co.

CP58-1223. High Gain Static A-C Switch. E. A. Petrocelli, Westinghouse Electric Corp.

CP58-1248. A Silicon Controlled Rectifier—Its Characteristics and Ratings.—I, D. K. Bisson and R. F. Dyer, General Electric Co.

MINING INDUSTRY

CP.* A.C. Powered Mining Machines. R. Holcombe, Jeffrey Mfg. Co., and J. B. Wren, Westinghouse Electric Corp.

CP.* An A.C. Powered Shuttle Car. A. L. Lee, Consolidation Coal Co.

CP58-1251. Multi-Motor A.C. Powered Direct-Drive Shuttle Car. J. Pokelsek, The Reliance Electric & Engineering Co. and R. D. Greer, Joy Mfg. Co.

58-1210. Trends In Automatic Hoist Controls. G. L. Tiley and II E. Zucker, Canadian Westinghouse Co., Ltd.

TUES. (Continued)

9:00 A.M.

ALCOA "LITTLE THEATRE"

Chairman:
W. T. Rogers, Ebasco Services, Inc.

Sponsor:
Safety Committee

2:00 P.M.

URBAN ROOM

Chairman:
J. A. Rawls, Virginia Electric and Power Co.

Sponsor:
Transmission and Distribution Committee

2:00 P.M.

TERRACE ROOM

Chairman:
E. R. Owen, General Electric Co.

Sponsor:
Feedback Control Systems Committee

SAFETY

- CP.* Some Aspects of Grounding, Insulating and Bonding in the Problem of Shock Hazard. J. B. Hays, Bell Telephone Labs., Inc.
- CP.* Hazard Control in Electrical Testing. J. V. Grimaldi, General Electric Co.
- 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.
- CP58-1209. Higher Residential Voltages—Safety Considerations. H. H. Watson, General Electric Co.

TRANSMISSION AND DISTRIBUTION

- 58-1255. Bibliography on Extra-High-Voltage Systems. P. A. Abetti, III General Electric Co.
- CP58-1256. Application of Electronic Computers to Structural Design of Transmission Towers. A. M. Lount, A. M. Lount and Associates.
- CP58-1254. First Report on Corrosion Tests of a New Steel Wire With Thick Aluminum Covering. J. G. Cavanagh, Copperweld Steel Co.
- 58-403. Lightning Current Distribution in Towers and Ground Wires. I. B. Johnson, A. J. Schultz, General Electric Co. and W. S. Price, American Electric Power Service Corp. (Re-presented for Discussion only)
- 58-1253. Magnetic Fields Around a Transmission Line Tower. J. G. Anderson and J. H. Hagenguth, General Electric Co. (Re-presented for Discussion only.)

THEORY AND PRACTICE OF REACTOR CONTROL

- CP.* A Digital Nuclear Reactor Control System. E. P. Gyftopoulos and P. M. Coble, Massachusetts Institute of Technology.
- 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.
- CP.* Stability Study of Enrico Fermi Power Plant. R. N. Albrecht, University of Michigan.

TUES. (Continued)

2:00 P.M.

FORT DUQUESNE ROOM

Chairman:
C. E. Quick, Detroit Edison Co.

Sponsor:
Industrial and Commercial Power Systems Committee

2:00 P.M.

BALLROOM

Chairman:
D. W. Borst, General Electric Co.

Sponsor:
Solid State Devices and Semiconductor Metallic Rectifiers Committees.

2:00 P.M.

MONONGAHELA ROOM

Chairman:
T. S. Novak, Bethlehem Steel Corp.

Sponsor:
Metal Industry Committee

CHARACTERISTICS OF LOADS

- 58-1258. Characteristics of an Electric Resistance Furnace Load. II W. A. Stelzer, The Dow Chemical Co.
- 58-1259. Load Characteristics of a Submerged Arc Silicon Smelting Furnace. G. Grant III, Dow-Corning Co.
- CP58-1200. Characteristics of Electrical Loads in a Cement Plant. L. C. Pringle, Hercules Cement Co.

SEMICONDUCTOR SWITCHING DEVICES—II

- CP.* 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.
- CP.* A 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)

ELECTRIC SYSTEMS FOR METAL ROLLING AND PROCESSING

- CP.* An Automatic Numerical Data Logging System For Tinplate Lines. G. E. Terwilliger, General Electric Co.
- CP.* A New System for Fully Card Programmed Blooming Slabbing Mill Operation. E. F. Boening, Allis-Chalmers Mfg. Co.
- CP.* Industrial Control Designs for A Changing Technology. P. A. Travisano, General Electric Co.
- 58-903. An Automatic Gauge Controller For A 56 Inch Reversing Steel Mill. R. L. Duke and L. R. Hulls, Canadian Westinghouse Co. Ltd. (Re-presented for Discussion only)

TUES. (Continued)

2:00 P.M.

BELL TELEPHONE
AUDITORIUM*Chairman:*
J. B. Ward, Pacific
Power and Light Co.*Sponsor:*
Computing Devices and
System Engineering
Committees**COMPUTER APPLICATION IN POWER SYSTEMS**

CP58-1261. Machine Printing of Flow Diagrams for Digital Load Flow Solutions. J. L. Bloodworth, Bonneville Power Adm.

58-1262. Digital Program for the Economic Selection of Generating III Capacity Additions. A. Cohen, The Service Bureau Corp. and L. E. Jensen, Illinois Power Co.

58-1171. A Primer on Loss Formulas. D. C. Harker, Commonwealth III Associates, Inc.

CP58-1217. Transmission and Distribution Interruption Records by Mechanical Accounting Methods. J. R. Gummingsall and J. J. Russell, Long Island Lighting Co.

58-1189. Some Applications of A New Approach to Loss Minimization in Electrical Utility Systems. T. W. Sze, J. R. Garnett and J. F. Calvert, University of Pittsburgh. (Re-presented for Discussion only)

2:00 P.M.

ALCOA "LITTLE THE-
ATER"*Chairman:*
G. D. Lobingier, West-
inghouse Electric Corp.*Sponsor:*
Education Committee**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 Technology.

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.

8:00 P.M.

MONONGAHELA
ROOM*Chairman:*
W. E. Vannah, McGraw
Hill Publishing Co.*Sponsor:*
Feedback Control Sys-
tems Committee**AUTOMATION IN THE SOVIET UNION**

Members of the Panel are:

S. W. Herwald, Westinghouse Electric Corp.

N. Cohn, Leeds and Northrup Co.

R. Palmer, International Business Machines Corp.

W. E. Vannah, McGraw Hill Publishing Co.

R. J. Kochenburger, Univ. of Connecticut

G. C. Newton, Jr., Massachusetts Institute of Technology

E. J. Kelly, Massachusetts Institute of Technology

WED.—OCT. 29

9:00 A.M.

ALLEGHENY ROOM

Chairman:
L. S. Schwartz, New York
University*Sponsor:*
Communication Theory
Committee**COMMUNICATION THEORY**

CP58-1263. Simplified Analysis of Digital Error Correction Techniques. E. E. Moore, Radio Corp. of America.

CP.* A Mechanized Radar Observer. G. P. Dineen, Massachusetts Institute of Technology.

CP58-1264. Utility Value Concepts in The Analysis of Communication Systems. L. S. Schwartz, New York University.

CP.* Asynchronous Multiplexing. J. E. Taylor, General Electric Co.

CP.* Imaginary Axis Translation of Transfer Functions. J. L. Ryerson, Griffiss Air Force Base.

58-1157. Recent Progress in Applying Information Theory to Digital I Transmission Systems. R. Filipowsky, Westinghouse Electric Corp. (Re-presented for Discussion only)

58-1233. Binary Communication Feedback Systems. B. Harris, I A. Hauptschein, K. C. Morgan and L. S. Schwartz, New York University (Re-presented for Discussion only)

9:00 A.M.

TERRACE ROOM

Chairman:
E. H. Browning, West-
inghouse Electric Corp.*Sponsor:*
Metal Industry Commit-
tee**DRIVE SYSTEMS FOR REVERSING HOT MILLS**

CP.* The Electrical Characteristics of a Universal Slabbing Mill. C. J. Bevan, Bethlehem Steel Co.

CP.* Programming of Reversing Hot Mills. W. M. Brittain and E. H. Browning, Westinghouse Electric Corp.

CP.* Industrial Control Systems for Reversing Hot Mill Drives. G. A. Kaufman and J. T. Bradford, General Electric Co.

58-1265. Motor Field Control of Large D-C Reversing Mill Motors. II L. R. Hulls and G. H. Samuel, Canadian Westinghouse Co., Ltd. (Re-presented for Discussion only.)

9:00 A.M.

URBAN ROOM

Chairman:
R. A. Larner, Texas Elec-
tric Service Co.*Sponsor:*
Rotating Machinery and
Relays Committees**ROTATING MACHINERY AND RELAYS**

58-1190. Protection of Pilot-Wire Relay Circuits. AIEE Subcommittee III on Pilot Wires, J. L. Blackburn, Chairman

58-1224. Operation of Apparatus Protective Relaying at Reduced Fre- III quencies. AIEE Subcommittee on Generator Protection. Presented by H. T. Seeley.

58-1179. How to Specify the Noise Rating of Large Electric Rotating III Machines. M. E. Talaat, Elliott Co.

58-1218. Proposed Test Procedure for Noise Measurements on Rotat- III ing Electric Machinery. A Committee Report, C. G. Veinott, Chairman

9:00 A.M.

MONONGAHELA
ROOM*Chairman:*
J. L. Swarner, Pullman
Standard Car Mfg.
Co.*Sponsor:*
Land Transportation
Committee**AUTOMATION OF CLASSIFICATION YARDS**

CP58-1213. Modern Railroad Freight Classification Yards Operation and Maintenance Considerations. H. A. Scott, New York Central System

58-1266. An Automatic Speed Control System for a Gravity Freight II Classification Yard. R. J. Berti, Union Pacific Railroad Co. and T. J. Dosch, Reeves Instrument Corp.

CP58-1230. A Method for Automatic Control of Car Retarders. H. C. Kendall and J. H. Auer, Jr., General Railway Signal Co.

WED. (Continued)

9:00 A.M.

**BELL TELEPHONE
AUDITORIUM**

Chairman:
A. M. Fuchs, CDC Control Services

Sponsor:
Feedback Control Systems Committee

FEEDBACK CONTROL SYSTEMS—I

- 58-1271. Quasi-Optimization of Relay Servos By Use of Stored Energy II for Braking. C. McDonald and G. J. Thaler, U.S. Naval Post-graduate School.
- 58-1191. A Dual-Mode Servomechanism Utilizing Saturation Switching. H. R. Weed and F. C. Weimer, The Ohio State University. (Re-presented for Discussion only)
- 58-1268. The Effect of Speed-Dependent Friction and Backlash on the II Stability of Automatic Control Systems. E. A. Freeman, English Electric Co., Ltd., formerly of Kings College.
- 58-1192. Optimum Response of Discontinuous Feedback Control Systems. II F. W. Nesline, Jr., Massachusetts Institute of Technology. (Re-presented for Discussion only)
- 58-1267. Two Theorems on the Number of Real Roots of the Characteristic Equation of any Stable Linear Physical System. II J. F. Koenig, The George Washington University.
- 58-1321. System Considerations in Computer Control of Semi-continuous Chemical Process. II T. M. Stout, Ramo-Wooldridge Corp. (Re-presented for Discussion only)
- CP58-1270. Classified Bibliography on Feedback Control Systems Part II: Root-Locus and Associated Procedures. T. J. Higgins, University of Wisconsin.
- 58-1327. Instability In A Non-Linear Conditionally-Stable System II Subjected to A Sinusoidal Input. J. L. Douce and R. E. King, Queen's University of Belfast.

9:00 A.M.

BALLROOM

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

Sponsor:
Nucleonics and Power Generation Committees

NUCLEAR POWER PLANTS—I

- 58-1199. Electrical & Control Features of the Shippingport Atomic III Power Station. H. G. Frus, H. A. Thompson, H. A. Van Wasen 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 & Electric Co.
- CP58-1273. Performance of the Sodium Reactor Experiment. J. E. Owens, W. T. Morgan and L. E. Glasgow, North American Aviation, Inc.
- CP.* Design Problems and Operating Experience on the APPR-1. K. Kasschau, Alco Products, Inc.
- 58-1272. Organic Moderated Reactors for Central Station Power. III W. E. Parkins and E. F. Weisner, North American Aviation, Inc.

WED. (Continued)

9:00 A.M.

**FORT DUQUESNE
ROOM**

Chairman:
H. L. Davis, Jr., Philadelphia Electric Co.

Sponsor:
Transmission and Distribution Committee

9:00 A.M.

**ALCOA "LITTLE THE-
ATRE"**

Chairman:
L. T. Bourland, U. S. Naval Research Laboratory

Sponsor:
Electronics Committee

2:00 P.M.

ALLEGHENY ROOM

Chairman:
G. Sziklai, Westinghouse Electric Corp.

Sponsor:
Communication Theory Committee

2:00 P.M.

URBAN ROOM

Chairman:
J. E. Williams, University of Illinois

Sponsor:
Rotating Machinery Committee

TRANSMISSION AND DISTRIBUTION

- 58-1214. Unbalanced Loading of Three-Phase Transformer Banks—III III Effect of Transformer Impedance. S. W. Anderson, Middle West Service Co.
- 58-1172. Motor Starting Lamp Flicker on Open Delta Transformer III Banks. J. C. Neupauer, Westinghouse Electric Corp. and C. L. Smith, Jr. Light, Water and Sewerage Dept., Griffin, Georgia.
- CP58-1274. Tests on Protective Gaps for Distribution Series Capacitors. H. E. Weaver, Commonwealth Edison Co. and N. M. Neagle, General Electric Co.
- 58-1184. Report of a Survey on the Connection of Shunt Capacitor III Banks. AIEE Capacitor Subcommittee of T. & D. Committee, B. H. Schultz, Chairman.
- 58-258. Higher Secondary Voltage for Residential Service. A. S. III Anderson, C. Hutchinson and S. J. Pearson, Ebasco Services, Inc. (Re-presented for Discussion only.)

ELECTRONIC CIRCUITS—I

- 58-1326. The Diode Reactance Modulator. G. F. Montgomery, National Bureau of Standards.
- 58-1238. A Stable, Direct Coupled, Transistor Servo Preamplifier. I A. N. DeSautels, Minneapolis-Honeywell Regulator Co.
- 58-1237. Performance of Class B Audio Amplifiers with Random I Noise Signals. T. Usher, Jr., Yale University.
- 58-1275. An Analog Frequency Measuring Circuit Accurate to 0.1%. I J. Mitchell, Link Aviation, Inc. (Re-presented for Discussion only.)
- 58-1276. Transistor Phase Locked Oscillators. K. A. Edwards & I O. Golubjatnikov, General Electric Co. and D. J. Brady, United Engineers, Inc. (Re-presented for Discussion only.)

COMMUNICATION IN SPACE

Members of the Panel are:

- Col. J. H. Ritter, USAF
R. L. Shuey, General Electric Co.
R. M. Fano, Massachusetts Institute of Technology
J. Vogelmann, Rome Air Development Center
J. R. Pierce, Bell Telephone Labs., Inc.

ROTATING MACHINERY

- CP.* Measurement of Rapidly Changing Temperatures. J. E. Shea, Underwriters Labs.
- CP.* Application Problems in the Measurement of Motor Winding Temperatures. C. E. Green, T. Spink, Jr. and D. Vandeventer, Leeds & Northrup Co.
- CP.* Start Winding Temperature Measurement of Fractional Horsepower Motors. R. E. Seely, General Electric Co.
- CP.* Temperature Measurement of Fractional Horsepower Motors. W. R. VanDyke, Westinghouse Electric Corp.
- CP58-1278. Temperature Measurement of Motor Windings on Stalled Rotor. V. G. Vaughan and A. P. White, Metals & Control Corp.

WED. (Continued)

2:00 P.M.

MONONGAHELA ROOM

Chairman:
A. V. Dasburg, General
Railway Signal Co.

Sponsor:
Land Transportation
Committee

2:00 P.M.

BELL TELEPHONE AUDITORIUM

Chairman:
H. P. Sleeper, Public
Service Electric and
Gas Co.

Sponsor:
Relays and Transmission
and Distribution Com-
mittees

2:00 P.M.

BALLROOM

Chairman:
L. E. Fogg, Kennecott
Wire and Cable Co.

Sponsor:
Insulated Conductors
Committee

2:00 P.M.

FORT DUQUESNE ROOM

Chairman:
E. W. Kenefake, Gen-
eral Electric Co.

Sponsor:
Power System Com-
munications Commit-
tee

LAND TRANSPORTATION

58-1212. Freight Car Tractive Resistance Measurements by Doppler
II Radar. R. D. Campbell, Westinghouse Air Brake Co.

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.
II Haddad, R. A. Vercella and D. W. Brown, Safety Industries,
Inc.

RELAYS AND TRANSMISSION AND DISTRIBUTION

58-1183. Improved Protection of 4 KV Feeders on the Baltimore Gas
III & Electric Co. System. W. W. Ward, Jr., Baltimore Gas &
Electric Co.

58-1222. Distribution Circuit Protection American Electric Power Co.
III W. H. Johnson & T. J. Meler, American Electric Power Ser-
vice Corp.

58-1229. Distribution Protection as Used on the Portland General
III Electric Co. System, Portland, Oregon. M. A. Bostwick, Port-
land General Electric Co.

58-1196. Distribution Circuit Protection. E. L. Guenzel and W. T.
III Morris, Texas Electric Service Co.

58-1322. High Speed Magnetic Air Breaker for Distribution Circuits.
III H. P. Sleeper, Public Service Electric & Gas Co. and J. D.
Findley, Westinghouse Electric Corp. (Re-presented for Dis-
cussion only.)

INSULATED CONDUCTORS

58-1175. Grounding and Cathodic Protection of Pipes for Pipe-Type
III Feeders. F. E. Kulman Consolidated Edison Co. of N.Y., Inc.

CP.* The St. Lawrence River High Voltage Submarine Cable Cross-
ing Part III—Installation. D. M. Farnham, S. H. Cunha, Que-
bec Hydro Electric Commission, G. B. Shanklin, Schenectady,
N.Y., and H. D. Short, Canada Wire and Cable Co., Ltd.

CP.* The St. Lawrence River High Voltage Submarine Cable Cross-
ing—Part IV—Final Tests and Field Data. D. M. Farnham,
S. H. Cunha, Quebec Hydro Electric Commission, G. B.
Shanklin, Schenectady, N.Y., and H. D. Short, Canada Wire
and Cable Co., Ltd.

POWER SYSTEM COMMUNICATIONS

58-1228. Experiences with Broad-Band Carrier Coupling. H. I. Dob-
III son, Tennessee Valley Auth.

CP.* TVA Power System Communication Planning. L. F. Kennedy,
General Electric Co.

WED. (Continued)

2:00 P.M.

ALCOA "LITTLE THEATER"

Chairman:
L. T. Bourland, U. S.
Naval Research Lab-
oratory

Sponsor:
Electronics Committee

THURS.—OCT. 30

9:00 A.M.

ALLEGHENY ROOM

Chairman:
D. Talley, International
Telephone and Tele-
graph Corp.

Sponsor:
Radio Communication
Systems Committee

9:00 A.M.

TERRACE ROOM

Chairman:
E. S. Van Nostrand,
West Penn Electric
Co.

Sponsor:
Rotating Machinery
Committee

9:00 A.M.

BALLROOM

Chairman:
L. V. Leonard, Public
Service Co. of Indi-
ana

Sponsor:
System Engineering
Committee

ELECTRONIC CIRCUITS—II

58-1168. The Ferroresonant Circuit. G. E. Kelly, Prairie View Agri-
I cultural and Mechanical College.

58-1277. Design Criteria for Low-Level Second-Harmonic Magnetic
I Modulators. E. J. Kletsy, Syracuse University. (Re-pre-
sented for Discussion only.)

58-1174. Linearization of Deadspace. S. Jones, Hughes Aircraft Co.
I

RADIO COMMUNICATION SYSTEMS

58-1236. Radio Attenuation at 11 KMC and Some Implications Affec-
I ting Relay System Engineering. S. D. Hathaway and H. W.
Evans, Bell Telephone Labs., Inc.

58-1227. The Expansion of the Pacific Coast Microwave Network.
I R. G. Kuck, Pacific Telephone and Telegraph Co.

CP.* A UHF Exciter for AM, FM and SSB. S. Kitces, Westing-
house Electric Corp.

58-989. Systems Engineering of Personal Radio Signaling Systems.
I W. Strack, Bell Telephone Labs., Inc. (Re-presented for Dis-
cussion only)

ROTATING MACHINERY

58-1180. A General Method for Slot Constant Calculation. K. J.
III Waldschmidt, A. O. Smith Corp.

58-1158. Polyphase Induction Motors with Unbalanced Rotor Con-
III nections. B. N. Garudachar and N. L. Schmitz, Univ. of Wis-
consin.

58-1280. Results of Motorette Evaluation of Insulation Systems. H. P.
III Boettcher, A. O. Smith Corp.

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 In-
III duction Motors. L. W. Magyar, General Motors Corp. (Re-
presented for Discussion only)

POWER SYSTEM OPERATION—DISPATCHING AND PERSONNEL

CP58-1281. Daily Dispatching and Scheduling of Kilovars. J. O.
Swanson and W. R. Bosshart, Bonneville Power Adm.

CP58-1282. New Load Dispatching Center for Philadelphia Electric
Company System. W. H. Johnson, Philadelphia Electric Co.

CP58-1283. The Selection and Training of Operating Personnel, M. J.
Thrasher, Long Island Lighting Co.

CP58-1211. Selection and Training of Operating Personnel for a Nu-
clear Power Station. E. J. Woolever, Duquesne Light Co.

THURS. (Continued)

9:00 A.M.

MONONGAHELA ROOM

Chairman:
J. W. Picking, Reliance Electric and Engineering Co.

Sponsor:
Industrial Control Committee

INDUSTRIAL CONTROL

- 58-1166. The Application of Shift Register Techniques to Materials II Handling. H. C. Diener, Jr., Westinghouse Electric Corp.
- CP58-1284. Logic Design Techniques of Static Switching Control for Transfer Machines. J. W. Stuart and R. A. Manning, Westinghouse Electric Corp.
- 58-1285. Static Control in Automatic Warehousing. L. L. Bosch, A. J. II Fanthorp, Bosch & LaTour and J. W. Stuart, Westinghouse Electric Corp.
- 58-1176. Elements of Reactor Controlled Reversible Induction Motor II Drives. W. Leonhard, Westinghouse Electric Corp.
- CP.* Transistorized Regulator for Battery Charging. E. E. Moyer, Acme Electric Corp.

SUBSTATIONS

- 58-1197. Design and Analysis of an Unplated High-Pressure Limited-Area Bolted Electric Joint Including a Method of Calculating the Various Components of Joint Resistance. R. K. Allen, General Electric Co.
- CP58-1286. Aluminum Angle Substation Bus Conductor. L. C. Weber, Northern States Power Co. and H. Fossum, Pioneer Service & Engineering Co.
- CP.* Cast Aluminum Alloy for Power Connectors. M. Brenner, Penn-Union Electric Corp.
- CP.* Fasteners for Electrical Connections on Aluminum Bus Conductors. D. H. Sandell and J. W. Atman, Aluminum Co. of America.
- CP58-1288. Preparation of Aluminum Conductors for Stable Electrical Connections. M. R. Monashkin, Burndy Corp.

NUCLEAR POWER PLANTS—II

- CP58-1289. Electrical Features of the Yankee Atomic Electric Plant. E. T. Witt, Stone & Webster Engr. Corp., C. F. Obermesser, Westinghouse Electric Corp. and R. E. Minkwitz, New England Power Service Co.
- 58-1194. Electrical Features of Indian Point Nuclear Electric Generating Station. T. D. Reimers, Consolidated Edison Co. of New York, Inc.
- CP58-1219. A Look at the Electrical Features—Dresden Nuclear Power Station. W. J. Shewski, Commonwealth Edison Co.
- CP.* A Single Region Slurry Homogeneous Reactor—Pennsylvania Advanced Reactor Project—Design and Maintenance. S. C. Townsend, Penna. Power & Light Co., W. E. Johnson and D. H. Fax, Westinghouse Electric Corp.

9:00 A.M.

BELL TELEPHONE AUDITORIUM

Chairman:
J. A. Smith, General Electric Co.

Sponsor:
Substations Committee

9:00 A.M.

URBAN ROOM

Chairman:
C. L. Wagner, Westinghouse Electric Corp.

Sponsor:
Nucleonics and Power Generation Committees

THURS. (Continued)

9:00 A.M.

FORT DUQUESNE ROOM

Chairman:
G. F. Pittman, Jr., Westinghouse Electric Corp.

Sponsor:
Magnetic Amplifiers Committee

9:00 A.M.

PITTSBURGH ROOM

Chairman:
J. R. Ragazzini, Columbia University

Sponsor:
Computing Devices and Feedback Control Systems Committees

9:00 A.M.

ALCOA "LITTLE THEATER"

Chairman:
E. L. Brancato, U. S. Naval Research Laboratory

Sponsor:
Electrical Insulation Committee

MAGNETIC AMPLIFIERS

- 58-1177. Reversible Polarity D-C Power Amplifier Using Magnetic I Amplifier Controlled Switched Transistors. N. L. Schmitz and T. Bernstein, Univ. of Wisconsin.
- 58-1328. 1957 Magnetic Amplifier Bibliography. AIEE Applications I Subcommittee Report—E. J. Alexander, Chairman Working Group.
- 58-1215. Behavior of the Ferroresonant Series Circuit Containing a I Square Loop Reactor. R. H. Dennard, International Business Machines Corp.
- 58-1193. Volt-Second Transfer Efficiency in Fast Response Magnetic I Amplifiers—Part I— N^2R and Control. T. J. Pula, Westinghouse Electric Corp. (Re-presented for Discussion only.)
- 58-173. Volt-Second Transfer Efficiency in Fast Response Magnetic I Amplifiers—Part II— N^2R as a Design Parameter. T. J. Pula, G. E. Lynn and J. F. Ringelman, Westinghouse Electric Corp. (Re-presented for Discussion only.)
- 58-1162. A Magnetic-Amplifier Commutating and Pulse-Width Encod- I ing Circuit. W. H. Lucke, U. S. Naval Research Lab.
- 58-1231. On Feedback in Magnetic Amplifiers—Part I—Single Feed- I backs. L. A. Finzi, Carnegie Institute of Technology and J. J. Suozzi, Bell Telephone Labs., Inc.
- CP58-1232. On Feedback in Magnetic Amplifiers—Part II—Combined Magnetic and Electric Feedbacks. L. A. Finzi, Carnegie Institute of Technology and J. J. Suozzi, Bell Telephone Labs., Inc.

COMPUTERS IN CONTROL SYSTEMS

- CP58-1182. Progress in Sampled-Data Systems. E. I. Jury, Univ. of California.
- CP.* Survey of Sampled Data Systems Analysis. J. V. Howell, Packard Bell Computer Corp.
- 58-1291. A General Approach for Obtaining Transient Response by I the Use of a Digital Computer. P. E. Lego, Westinghouse Electric Corp., and T. W. Sze, Univ. of Pittsburgh.
- 58-1198. The Operational Amplifier as a Laboratory Tool. P. E. I Pfeiffer, The Rice Institute.

ELECTRICAL INSULATION

- CP.* Three Decades of Progress in Electrical Insulation. L. J. Berberich, Westinghouse International Co.
- 58-1208. The Present Status and Anticipated Progress in the Field I of Insulating Materials. T. D. Callinan, International Business Machines Corp.
- CP.* Twenty Years of Progress in Silicone Insulation. J. F. Dexter, Dow Corning Corp.
- CP.* Applications and Research Progress in Gaseous Dielectrics. T. W. Liao, H. G. Pfeiffer and R. E. Plump, General Electric Co.

THURS. (Continued)

2:00 P.M.

ALLEGHENY ROOM

Chairman:
P. T. Sproul, Bell Telephone Laboratories, Inc.

Sponsor:
Radio Communication Systems Committee

2:00 P.M.

TERRACE ROOM

Chairman:
J. S. Askey, Elliott Co.

Sponsor:
Rotating Machinery Committee

2:00 P.M.

BALLROOM

Chairman:
S. N. Witts, Northern States Power Co.

Sponsor:
System Engineering Committee

2:00 P.M.

MONONGAHELA ROOM

Chairman:
J. A. Smith, General Electric Co.

Sponsor:
Substations Committee

RADIO COMMUNICATION SYSTEMS

58-1292. Dial Telephone Service for Smith Island—An Isolated Community in the Chesapeake Bay. M. E. Littleton, The Chesapeake and Potomac Telephone Co. of Maryland.

CP.* ABC's of PCM. J. Cohn, Motorola, Inc.

58-1293. Public Air-Ground Telephone Service Trial. L. M. Augustus, I Michigan Bell Telephone Co.

ROTATING MACHINERY

CP.* The Life of Class A Random Wound Motor Insulation (A Report). P. L. Alger, General Electric Co.

CP.* Insulation System Development Aided by Motorette Test. G. P. Gibson and P. G. Lucey, Westinghouse Electric Corp.

58-1279. Iron Loss Calculations on Fractional Horsepower Induction III Motors. P. H. Trickey, Wright Machinery Co.

CP58-1318. Computing Iron Losses in Fractional Horsepower Induction Motor Design. C. E. Linkous, General Electric Co.

58-1221. Influence of Higher Operating Temperatures on Motor Design. R. F. Woll, Westinghouse Electric Corp.

POWER SYSTEM PLANNING AND OPERATING

CP58-1294. System Stability and Related Problems in the West Central United States. H. D. Hunkins, Bureau of Reclamation.

58-1295. Rural Distribution Planning. E. H. Breckenfelder and C. M. III Stanley, Stanley Engineering Co.

58-1195. Forecasting Procedures Advance Effective Water Routings on the U.S. Columbia River Hydroelectric System. H. M. McIntyre and M. S. Sachs, Bonneville Power Administration.

58-1156. More Angles of Phase Shift Added to Previously Known Ice Melting Methods. I. R. Ekstrom, Commonwealth Edison Co.

58-1163. An Automatic Dispatching System. M. J. Brown, Westinghouse Electric Corp.

SUBSTATIONS

CP58-1287. Evaluation of Two Basic Shapes of Conductor Grooves for Aluminum Power Connectors. W. Frank and M. Monashkin, Burndy Corp.

58-1296. Supervisory Control for Air Force Missile Test Center. C. L. III Cadwell, Westinghouse Electric Corp.

CP58-1297. Application of Synchronizing Devices to Frequency Changers. R. E. Stillwagon and S. D. Silliman, Westinghouse Electric Corp.

CP58-1298. A Modern Current Regulator for D-C Machines. R. A. Geiselman, G. W. Champney and J. F. Reuther, Westinghouse Electric Corp.

THURS. (Continued)

2:00 P.M.

URBAN ROOM

Chairman:
A. G. Mellor, General Electric Co.

Sponsor:
Nucleonics and Power Generation Committees

2:00 P.M.

PITTSBURGH ROOM

Chairman:
J. G. Truxal, Brooklyn Polytechnic Institute

Sponsor:
Feedback Control Systems Committee

2:00 P.M.

FORT DUQUESNE ROOM

Chairman:
J. C. McPherson, International Business Machines Corp.

Sponsor:
Computing Devices 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 Approach to Minimum Fuel Cost Using Natural Uranium. V. V. Mason and S. M. Jones, Canadian Westinghouse Co., Ltd.

CP58-1299. Auxiliary Power Systems for Nuclear Plants. R. E. Frick, Gilbert Associates, Inc.

CP58-1300. Training Simulator for Nuclear Power Plant Reactor Operators. N. E. Bush, Westinghouse Electric Corp.

FEEDBACK CONTROL SYSTEMS—II

57-946. Differential Analyzer Aids Design of Electric Utility Automatic Dispatching System. L. K. Kirchmayer, General Electric Co. (Re-presented for Discussion only.)

58-1301. Positive Feedback Phase Space Trajectories and Application to Servo Systems. Z. H. Meiksin, Univ. of Pittsburgh.

CP58-1302. Digital Computer Study of a Third Order Non-Linear Servomechanism. Y. K. Ku and K. Fukunaga, Univ. of Pennsylvania.

58-1161. General Synthesis Procedure for Computer Control of Single II and Multi-Loop Linear Systems. R. E. Kalman, International Business Machines, Inc. and J. E. Bertram, Columbia University. (Re-presented for Discussion only.)

58-1303. Closed-Loop Analysis of Sampled Data Systems with Appreciable Pulse Width. G. J. Murphy and H. B. Kennedy, Northwestern Univ.

58-1324. Analog Computer Study of Sampled-Data Systems. H. Chestnut, A. Dabul and D. W. Leiby, General Electric Co. (Re-presented for Discussion only.)

CP58-1269. Classified Bibliography on Feedback Control Systems—Part I: Sampled-Data Systems. T. J. Higgins, Univ. of Wisconsin and R. W. Greer, North American Aviation Corp.

AUTOMATIC PROGRAMMING OF DIGITAL COMPUTERS FOR ENGINEERING AND DATA PROCESSING

CP.* Fortran—A Close Look at an Automatic Coding System. J. T. Ahlin and W. P. Heising, International Business Machines Corp.

CP.* The Use of Automatic Programming Techniques for Solving Engineering Problems. N. Chackan, T. V. Martin and J. T. Carleton, Westinghouse Electric Corp.

CP.* Automatic Programming for Data-Processing Problems. G. M. Hopper, Sperry Rand Corp.

CP.* A Specialized Automatic Programming System for the Air Material Command. Col. E. R. Miller, Dayton Air Force Depot.

FRIDAY—OCT. 31

9:00 A.M.

FORT DUQUESNE ROOM*Chairman:*L. O. Dorfman, Sander-
son and Porter, Engi-
neers*Sponsor:*Rotating Machinery
Committee

9:00 A.M.

PITTSBURGH ROOM*Chairman:*D. L. Levine, Common-
wealth Edison Co.*Sponsor:*

Transformers Committee

9:00 A.M.

URBAN ROOM*Chairman:*C. A. Woodrow, Gen-
eral Electric Co.*Sponsor:*

Switchgear Committee

9:00 A.M.

MONONGAHELA ROOM*Chairman:*H. R. Armstrong, Detroit
Edison Co.*Sponsor:*Protective Devices
Committee**ROTATING MACHINERY**

CP58-1305. Pioneering Insulation Evaluation. C. M. Magers and J. S. Askey, Elliott Co.

CP.* Accelerated Voltage Endurance Tests. R. G. Rhudy and H. E. Mazanek, General Electric Co.

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.

58-1320. Torque and Speed Control of Induction Motors Using Satu- III rable Reactors. J. F. Szabyla, The University of British Columbia.

TRANSFORMERS

58-1306. Temperature Rise Tests on Ventilated Dry-Type Transform- III ers. M. F. Beavers and L. C. Whitman, General Electric Co.

58-1165. The Surge Performance of Transformers and Rotating Ma- III chines—Survey and Classification of Published Data. P. A. Abetti, General Electric Co.

58-1164. Bibliography on the Surge Performance of Transformers and III Rotating Machines. P. A. Abetti, General Electric Co.

CP.* Inner-Cooled Large Power Transformers. W. D. Albright and H. R. Moore, Westinghouse Electric Corp.

SWITCHGEAR

58-1220. A Study of the Dynamic Response of Arcs in Various Gases. III K. H. Yoon and H. E. Spindle, Westinghouse Electric Corp.

58-1155. An Approach to Mathematical Analysis of A-C Arc Extinc- III tion in Circuit Breakers. T. E. Browne, Jr., Westinghouse Electric Corp.

58-943. The Effect of Linkage Flexibility of Dynamics of High Ca- III pacity Outdoor Circuit Breakers. P. Barkan and E. J. Tuohy, General Electric Co.

58-1225. Field Testing of a 69 KV Oil Circuit Breaker by the South- III ern California Edison Co. P. C. Edwards, Federal Pacific Electric Co. and P. Q. Nelson, Southern California Edison Co.

58-1307. An Improved Line of Frame-Mounted Outdoor Oil Circuit III Breakers for Intermediate Voltages. E. E. Briggs and R. D. Hambrick, Federal Pacific Electric Co.

LIGHTNING PROTECTION OF EQUIPMENT

58-1226. Application of Arresters for Complete Lightning Protection III of Substations. J. M. Clayton and R. W. Powell, Westinghouse Electric Corp.

58-524. Overvoltage Protection and Maintenance Testing of A-C Ro- III tating Machines. H. R. Armstrong and J. E. Mulavey, The Detroit Edison Co.

58-1170. Lightning Protective Requirements of Generators Connected III to the System through Wye-Grounded-Delta Transformers. J. K. Dillard and A. R. Hileman, Westinghouse Electric Corp.

58-1160. Surge Transfer through Three-Phase Transformers. A. R. III Hileman, Westinghouse Electric Corp.

58-1203. Lightning Arrester Testing, a Proposal for a Revision in the III Standards. E. Beck, Westinghouse Electric Corp.

FRI. (Continued)

9:00 A.M.

ALLEGHENY ROOM*Chairman:*W. K. MacAdam,
American Telephone
and Telegraph Co.*Sponsor:*Communication Division
and Education Com-
mittee

9:00 A.M.

BALLROOM*Chairman:*H. E. Lokay, Westing-
house Electric Corp.*Sponsor:*

Substations Committee

9:00 A.M.

BELL TELEPHONE AUDITORIUM*Chairman:*L. K. Kirchmayer, Gen-
eral Electric Co.*Sponsor:*System Engineering and
Power Generation
Committees**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. and L. C. Adams, Clemson College.

CP58-1323. Telephone Engineering Management Conference. P. H. Hen- son, Lincoln Telephone and Telegraph Co.

CP.* The Evaluation of Engineering Training in Industry. A. L. Charney, Bell Telephone Co. of Pennsylvania.

SYMPOSIUM ON CONVENTIONAL AND UNIT-TYPE SUBSTATIONS IN DISTRIBUTION SYSTEMS

Members of the Panel are:

C. H. McDonald, Southwestern Gas & Electric Co.

A. H. Thiermann, Virginia Electric Power Co.

J. F. Jones, Baltimore Gas & Electric Co.

H. F. Klevjer, Duquesne Light Co.

R. G. Beyer, General Electric Co.

M. S. Schneider, Cincinnati Gas & Electric Co.

H. B. Wortman, Westinghouse Electric Corp.

T. F. Offenbacher, Indianapolis Power & Light Co.

E. E. Ramm, Ohio Edison Co.

POWER SYSTEMS OPERATIONS—MAINTENANCE COSTS58-1201. Time-Error Control for Interconnected Synchronous Electric III Power Systems. D. Broadbent, The New South Wales Uni-
versity of Technology.

CP58-1308. Fundamental Concepts of Incremental Maintenance Costs as Used by Ohio Edison Co. 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, The Potomac Edison Co.; R. F. Crim, H. T. McCarthy, West Penn Power Co.; T. A. Lake and W. S. Schmidt, Monongahela Power Co.

58-1187. Application of Digital Computer Technique for Development III of the Incremental Maintenance Cost. F. H. Light, Philadel-
phia Electric Co.

CP.* Preliminary Report on Survey of Maintenance Costs Applic- able to Incremental Generation. L. T. Anstine, Baltimore Gas and Electric Co.

FRI. (Continued)

2:00 P.M.

FORT DUQUESNE ROOM

Chairman:
M. R. Lory, Westinghouse Electric Corp.

Sponsor:
Rotating Machinery Committee

ROTATING MACHINERY

- CP58-1311. A Utility's Functional Evaluation Tests for High-Voltage Stator Insulation. A. W. W. Cameron and M. Kurtz, Hydro-Electric Power Commission of Ontario.
- CP58-1310. Tests and Life Expectancy of Generator Windings. V. S. McFarlin, Boston Edison Co.
- CP58-1312. Experience in Analysis of D-C Insulation Test for Maintenance Programming. F. R. Schleif and L. R. Engvall, Bureau of Reclamation.
- 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.

TRANSFORMERS

- 58-1150. The Relationship Between Operating Voltage and the Standard Dielectric Tests for Power and Distribution Transformers. AIEE Committee Report of Dielectric Tests Subcommittee, H. H. Wagner, Chairman of Working Group.
- 58-1169. Are Stabilizing Windings Necessary in All Wye-Connected Transformers. B. A. Cogbill, General Electric Co.
- 58-1154. The Influence of Performance and Design Limits on the Design of Power Transformers by Computer. W. G. Chambers, Westinghouse Electric Corp.
- CP58-1325. Computers Change Transformer Design Philosophy. H. J. Weber and G. Gallousis, Allis-Chalmers Mfg. Co.

SWITCHGEAR

- 58-1173. Testing Magnetic Air Circuit Breakers for 5 Cycle Performance. J. D. Wood and W. A. Carter, I-T-E Circuit Breaker Co.
- 58-1313. A New Isolated Phase Bus Design. H. H. Rugg and P. H. Westermeyer, Westinghouse Electric Corp.
- CP.* Inspection and Maintenance of Magnetic Air Circuit Breakers and Associated Metal Clad Switchgear. R. C. Dickinson, Westinghouse Electric Corp.
- 58-1202. Selecting Damping Resistors for Vacuum Switches in Bank-to-Bank Switching. J. Zaborsky, Washington Univ; J. W. Rittenhouse and E. L. Leuhning, Hi Voltage Equipment Co.
- CP58-1317. Recent Developments in Metal-Clad Switchgear. J. W. McMillen, Westinghouse Electric Corp.

FRI. (Continued)

2:00 P.M.

TERRACE ROOM

Chairman:
A. F. Mentinck, General Electric Co.

Sponsor:
Computing Devices and Nucleonics Committees

2:00 P.M.

ALLEGHENY ROOM

Chairman:
H. P. Walker, Bureau of Ships

Sponsor:
Electrical Insulation Committee

COMPUTERS IN NUCLEAR SYSTEMS

- CP58-1314. Digital Calculation of Transient Performance of the Primary Coolant System in a Water Reactor. D. G. Lewis, General Electric Co.
- CP58-1315. 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.
- 58-1186. On The Behavior of Natural and Artificial Voids in Insulation Under Internal Discharge. S. I. Reynolds, General Electric Co.
- 58-1167. New Inorganic Insulation for 500°C Electrical Equipment. I C. H. Vondracek and E. J. Croop, Westinghouse Electric Corp.
- 58-1239. Electric Breakdown of Gases and Vapors of Chlorofluorohydrocarbons. C. N. Works and E. W. Lindsay, Westinghouse Electric Corp.
- CP.* Factors Affecting the Electric Strength of Electronegative Gaseous Insulation. P. Narbut, D. Berg, C. N. Works and T. W. Dakin, Westinghouse Electric Corp.

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

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.

SOCIAL EVENTS

WELCOME TEA

If you arrive early, plan to attend the Welcome Tea on Sunday, October 26th. It is being held from 4 p.m. to 6 p.m. in the Monongahela Room on the 17th floor. This tea is sponsored jointly by the Ladies Committee and the Pittsburgh Section. It will give you an opportunity to meet old friends and make new acquaintances.

GENERAL SESSION

The General Session at 2 p.m. on Monday will feature an address by Mr. J. K. Hodnette, Executive Vice-President, Westinghouse Electric Corporation. He will speak on "Industry and the Atom Today." During this session the AIEE Education Medal will be awarded to Professor John F. Calvert, Head, Electrical Engineering Department, University of Pittsburgh.

LUNCHEONS

Two important luncheons are scheduled during the Fall Meeting. These will be held at noon on Tuesday and Thursday in the Ballroom.

The Tuesday lunch will have as its theme the "Pittsburgh Re-development and Bicentennial." The speaker will be Mr. Adolph W. Schmidt who is President of the Allegheny Conference on Community Development. Mr. Schmidt is Vice President and Governor of T. Mellon and Sons and is actively engaged in many public service projects.

The Thursday luncheon will follow the theme of "Research in the Pittsburgh Area." The directors of research of the many companies in this area will attend this meeting. As a fitting climax to this gathering, the John Fritz Medal will be awarded to Dr. Mervin J. Kelly, President, Bell Telephone Laboratories, Inc. Dr. Kelly's acceptance speech will conclude the luncheon hour.

The price of each of these luncheons is \$3.75. Tickets may be purchased at the information desk.

On Wednesday evening, October 29th, the Golden Triangle Frolics will be held in the Ballroom on the 17th floor of the hotel. The evening promises to be a very enjoyable one for the members and their ladies. After dinner there will be an excellent floor show followed by dancing. Tickets will be \$11.50 each. Dress will be informal.

GOLDEN TRIANGLE FROLICS

INSPECTION TRIPS

Pittsburgh is proud to present a series of tours that include:

- The world's first full-scale nuclear electric power plant for peacetime operation,
- The largest laboratory for steel research in the world,
- The largest light-metals research facility in the world, and
- The world's largest and most modern fully-automatic freight car classification yard.

Members are asked to register for all trips as early in advance as possible. Tickets may be purchased at the Inspection Trips desk. Such purchases should not be delayed beyond 3:00 p.m. of the day preceding the trip. All tours will leave by chartered bus from the Penn-Sheraton Hotel. The cost of each trip is \$2.00.

**U.S. Steel Corp.—
Irvin Works**
Tuesday, October 28
(9:00 A.M.)

**Westinghouse Electric
Corp.**
Tuesday, October 28
(1:00 P.M.)
Tour "A"—East Pitts-
burgh Plant

**Tour "B"—Atomic
Power Dept.**
Forest Hills and Waltz
Mill

**Duquesne Light Co.
Atomic Power Sta-
tion, Shippingport**
Wednesday, Oct. 29
(1st trip at 8:30 A.M.
followed by others in
morning and after-
noon as required.)

**U.S. Steel Research
Center, Monroeville**
Thursday, October 30
(9:00 A.M.)

**Aluminum Co. of
America Research
Laboratories, New
Kensington**
Thursday, October 30
(1:00 P.M.)

**Westinghouse Re-
search Laboratory,
Churchill Borough**
Friday, October 31
(9:00 A.M.)

This one and one-half hour tour covers the operations of the cold reduction mills, the continuous strip mill, continuous galvanizing lines, electrolytic tinning line, annealing furnaces, pickling lines and tinning stocks. Some of the latest developments in steel-making processes are to be seen here.

The largest of the Divisions of the Westinghouse Electric Corporation, this plant manufactures the heavier apparatus lines of the electrical industry. Of particular interest are the service facilities—the world's largest network calculator and a high power laboratory "proving ground" for power apparatus of the future.

Basic engineering design for all atomic reactors is developed at Forest Hills; the experimental nuclear tests involving the designs are conducted at the criticality facility at Waltz Mill. Fuel element experiments in connection with the Yankee Atomic Electric Project are also under way at Waltz Mill. The effects of radiation on materials will be determined at the Westinghouse testing reactor, WTR, which is being constructed adjacent to the criticality facility. This visit includes the Westinghouse Reactor Evaluation Center.

The world's first full-scale electric power plant devoted exclusively to peacetime needs utilizing an atomic reactor as its primary heat source. While experimental reactors of many different types have been built on a small scale, the technology of the pressurized-water reactor—the same type used on the submarine "Nautilus"—is by far the most advanced. The plant has a net output in excess of 60,000 kw at 600 pounds steam pressure. An informative trip—a first step into the world of tomorrow.

The largest laboratory for steel research in the world. Nearly 1,000 technical and scientific personnel are engaged in fundamental and applied research. Subjects under investigation include such widely diversified problems as new processes for upgrading coal chemicals and the study of dislocations in the atomic structure of steel.

The Alcoa Research Laboratories—the world's largest light-metals research facility—was established in 1918. The Research Laboratories now consists of fifteen divisions; twelve of these are located in New Kensington. The research center covers 64 acres and occupies 172,000 square feet of floor space in three buildings. The aluminum industry's major alloys—of which over 70 are now in use—were discovered by the laboratories' scientists and engineers. Constant research is going on here to uncover additional processes to widen the ever-expanding use of this versatile light metal.

Dedicated in 1956 these laboratories employ 800 people who find the country-like atmosphere particularly conducive to the intensive pioneering research for which Westinghouse is noted. "Blue Sky," Research-of-the-Future, occupies thirty per cent of the total man hours expended. Fifty per cent of the time is spent in basic research. Government oriented research associated with Reactor Development, Communications, and Detecting Devices are examples of other work carried on at the Laboratories. Here are to be found the latest developments in laboratory equipment and laboratory planning.

**Pennsylvania Railroad
Conway Yard**
Friday, October 31
(1:00 P.M.)

Alcoa Exhibit

The world's largest and most modern fully-automatic freight car classification yard. Through Conway passes most of the enormous east-west traffic between the Eastern Seaboard, Great Lakes, and Middle West. The efficiency of automation is apparent here where 9,000 cars per day are sorted and classified according to their destination. The system uses electronic analog computers, radar, automatic switching, inductive trainphone, cab signals, electronic scales, punched-card accounting machines, micro-talkie radios, intercom and paging systems, automatic floodlights, pneumatic tubes, teletypes, and tape recorders.

This trip is sponsored by the Pennsylvania Railroad Company and Union Switch and Signal, a division of Westinghouse Airbrake Company, manufacturers of the VELAC Automatic Classification Yard System.

During the five days of the Fall Meeting, an invitation is extended by the Aluminum Company of America to visit the first floor of their main office building just across the street from the Penn-Sheraton Hotel. There in the entire entrance and main lobbies will be a live encyclopedia of aluminum electrical and electronic equipment for the utility and industrial fields—perhaps the most complete grouping of such equipment ever collected. Also among the features will be a scale model of Alcoa's steam generating station at Warrick, Indiana, now under construction. The model shows the aluminum features of a plant that is estimated to represent the greatest per-kw use of aluminum in the history of power generation.

LADIES PROGRAM

An interesting program has been planned for the ladies attending the meeting by Mrs. Tomlinson Fort and her committee. The Ladies Hospitality Room will be the Presidential Suite (Room 1666) in the Hotel. This room will be available to visiting women at all times during the week and committee members will be in attendance to give helpful information of all kinds.

Coffee Hour will be observed each day from 9:00 a.m. to 10:30 a.m., Monday through Friday, in the Hospitality Room.

On Monday afternoon from 3:00 p.m. to 4:30 p.m. the Aluminum Company of America invites the ladies to a tour of the ALCOA building. Tea will be served during the tour. This building is close to the Penn-Sheraton Hotel and also faces on Mellon Square Park.

On Tuesday, the Westinghouse Electric Corporation is sponsoring a luncheon at the Longue Vue Country Club. Free transportation by bus will be provided to this charming club which is in the hills to the east of the city, overlooking the Allegheny River. During the luncheon, the guests will be entertained by the Westinghouse Quartette, an outstanding group in the "barbershop" field. Busses leave the hotel at 11:30 a.m. and return at about 3:30 p.m.

On Wednesday at 12:30 p.m., the Duquesne Light Company will sponsor a Bridge-Luncheon in their Utility Hall. This is located at 435 Sixth Avenue, just across the street from the hotel.

On Thursday, the ladies will be guests of the University of Pittsburgh. Free transportation will be provided and the busses will leave the hotel at 1:00 p.m. The ladies will be taken on visits to Heinz Chapel, Stephen Foster Memorial Hall and the University Nationality Rooms. Tea will be served, courtesy of University of Pittsburgh. Return busses will arrive at the hotel at about 4:30 p.m.

Tickets will be required for attendance at all of the above functions. They may be obtained free through members of the Ladies Committee.

Fall General Meeting Committees

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H. L. Wood
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R. W. Simmons

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W. G. Boes
J. H. Follansbee, Jr.
S. J. Jones
H. R. McNutt—*October 27*
K. J. Allen
W. H. Booth
D. P. Burns
F. J. Oprendek
J. B. Slemmons, Jr.

George Gallousis—*October 28*
Dick Ziesche
John B. Shaw
C. J. Roeger

M. J. McDonough—*October 29*
H. E. Toner
W. G. Boes
H. C. Black
R. H. Barnes
T. W. States

J. E. Lange—*October 30*
H. B. Kerr
J. L. Koepfinger
W. O. Zimmerman
C. D. Woodcock

W. J. Wartinbee—*October 31*
J. D. Neeley
C. Hanich

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Mrs. A. P. Hayward
Mrs. E. L. Harder
Mrs. F. H. Schlough
Mrs. M. P. Getting
Mrs. C. N. Clark
Mrs. E. M. Hays

Mrs. R. E. Larson
Mrs. Pascal Beckjord
Mrs. E. S. Reeser
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Mrs. B. R. Teare, Jr.

**Papers, Printing and
Tickets**

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COMMITTEE MEETINGS

MONDAY, OCTOBER 27th

9:00 A.M.

Professional Conduct
Industrial and Commercial Power Systems
Semiconductor Metallic Rectifiers
Electronic and H. F. Instrumentation

12:00 NOON

Luncheon—AIEE Medal in Electrical Engineering Education
Luncheon—Electrical Systems for Commercial Buildings

2:00 P.M.

General Session

4:00 P.M.

Special Publications
Mining Industry
Working Group on Switching Surges

TUESDAY, OCTOBER 28th

9:00 A.M.

Non-Linear Feedback Control Subcommittee
TOD Manual Subcommittee
Nucleonics
Periodicals and Transactions
Data Communication
Education
Members-for-Life Fund
Management
Communication Theory
District #2 Executive

11:00 A.M.

Communication Switching Systems

12:00 NOON

Luncheon—General Applications Division
Luncheon—Metal Industry Division

2:00 P.M.

Communication Division
District #2 Executive
Power Generation
Safety
Instrumentation Division
AIEE Publication Department 75th Anniversary

4:00 P.M.

Computer Application Subcommittee

OLIVER ROOM
PARLORS E-F
GRANT ROOM
CLUB ROOM

PARK VIEW ROOM
PARLORS E-F

BALLROOM

EAST ROOM
WEST ROOM
CLUB ROOM

ROOM 457
ROOM 408
GRANT ROOM
ROOM 470
EAST ROOM
WEST ROOM
OLIVER ROOM
PARLORS E-F
CLUB ROOM
PARLORS B-C

ROOM 468

PARK VIEW ROOM
GRANT ROOM

AERO ROOM
PARLORS B-C
CLUB ROOM
PARLORS E-F
WEST ROOM
ROOM 495

EAST ROOM

COMMITTEE MEETINGS (Continued)

WEDNESDAY, OCTOBER 29th

8:00 A.M.

Breakfast—Pulse Transformer Working Group

9:00 A.M.

Publications Department
System Operations Subcommittee
Probability Applications W.G.
Revision AIEE Grounding Guides #954 W.G.
Power Division
Industry Division
Science and Electronics Division
Commercial Buildings Power Systems Subcommittee
Professional Development and Recognition Department
Solid State Devices
Administration Department
R. M. Insulation Subcommittee
Constitution and By-Laws
Components Specifications Subcommittee
Membership

9:30 A.M.

Research

12:00 NOON

Luncheon—Frequency Range Transformer W.G.
Luncheon—D-C Subcommittee
Luncheon—System Planning Subcommittee

1:00 P.M.

Nucleonic and Radiation Instrumentation
System Economics Subcommittee

1:30 P.M.

Stray Load Loss W.G.

2:00 P.M.

Administration Department
Ad Hoc—AIEE Place in Engineering Field
System Engineering
Technical Groups
Hermetic Motor Insulation W.G.
Electric Coupling Subcommittee
Feedback Control Systems
TOD Representatives

4:00 P.M.

Nuclear Congress and Nucleonics
Power Transformer and Inductor W.G.
Electronic Circuits and Systems Subcommittee
Induction Machinery Subcommittee
Land Transportation

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ROOM 470
ROOM 468
ROOM 463
ROOM 414
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WEST ROOM
OLIVER ROOM
PARLORS B-C
EAST ROOM
PARLORS E-F
PARK VIEW ROOM
ROOM 457
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CLUB ROOM
AERO ROOM

WESTINGHOUSE
RESEARCH
LABORATORIES

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LOCATION OF ALL MEETING ROOMS

17th Floor	Ballroom Urban Room Monongahela Room Allegheny Room Ft. Duquesne Room Parlors B, C, E and F
4th Floor	468, 470, 457, 463, 495, 408, & 414
Club Floor	Park View Room Grant Room Aero Room Club Room Oliver Room East Room West Room
Main Lobby	Terrace Room
Lower Lobby	Pittsburgh Room

An aerial, blue-tinted photograph of Mellon Square Park. The park features a large, multi-tiered fountain with several circular basins. Numerous people are scattered throughout the park, some standing near the fountain and others walking on the paved areas. The park is bordered by several buildings, including a tall, modern skyscraper on the left and a large, classical-style building with a prominent entrance on the right. A street with a car is visible in the lower-left corner. The overall scene is a busy urban public space.

**PLEASE RETAIN FOR USE
DURING ENTIRE MEETING.**

Mellon Square Park