



# Middle Eastern District Meeting

May 19 - 21, 1959

## Baltimore, Maryland

Headquarters  
Lord Baltimore Hotel

### Schedule of Events

#### May 19—TUESDAY

Registration—8:00 a.m. to 4:00 p.m.  
Ladies' Coffee Hour—10:00 a.m.  
General Session—10:00 a.m.  
Trip to Black & Decker Mfg. Co.—  
12:00 Noon  
Trip to Westinghouse Electric Corp.—  
12:30 p.m.  
Technical Sessions—2:00 p.m.  
Ladies' Dinner & Card Party—  
6:00 p.m.  
Smoker—6:30 p.m.

#### May 20—WEDNESDAY

Registration—8:00 a.m. to 4:00 p.m.  
Trip to The Martin Co.—8:15 a.m.  
Trip to Herbert A. Wagner Generating  
Station—8:30 a.m.  
Technical Sessions—9:00 a.m.  
Ladies' Coffee Hour—9:00 a.m.  
Ladies' Trip to Annapolis—10:00 a.m.  
Trip to Bethlehem Steel Co.—12:30 p.m.  
Technical Sessions—2:00 p.m.  
Dinner-Dance—7:00 p.m.

#### May 21—THURSDAY

Registration—8:00 a.m. to 12:00 Noon  
Trip to Aberdeen Proving Ground—  
8:30 a.m.  
Technical Sessions—9:00 a.m.  
Ladies' Coffee Hour—9:00 a.m.  
Technical Sessions—2:00 p.m.



Downtown Baltimore, Md.

The AIEE Middle Eastern District Spring meeting to be held at the Lord Baltimore Hotel on May 19, 20, and 21 will feature 135 technical papers presented by outstanding speakers from many parts of America and Europe. Interesting inspection trips, closely allied with the technical sessions, will be plentiful due to the prominence of Baltimore as a nucleus for so many leading diversified industries. Scenic tours, including a trip to historic Annapolis, have been arranged specifically to appeal to the ladies. The program of social affairs will be educational and entertaining for all.

The **General Session** will be held in the Calvert Room of the Lord Baltimore Hotel on **Tuesday morning, May 19th, at 10 o'clock**. Mr. L. F. Hickernell, President of AIEE, will briefly discuss the accomplishments and plans of the Institute. Dr. B. R. Teare, Jr., Vice-President of District II, will present the greetings and welcome to the meeting. A formal address, on a subject of the utmost importance to the profession, will be delivered by an outstanding personage.

**TECHNICAL SESSIONS:** The program of technical sessions has been carefully planned around a host of papers by authors from as far away as California in the West and Paris, France, in the East. The sessions include such timely subjects as a five-paper session on satellite tracking. The two principal methods of satellite tracking will be described by authors from military (United States Naval Research Laboratory) and civilian electronic laboratories. Papers on computers and automatic programming cover not only new uses in industry, but also the expanding use of these devices in the utility field. The session covering the use of epoxy resin formulations for joints, terminations and cable sheath repairs will be of interest to those working in

the power field as well as those engaged in communications work. Equally interesting and current papers will be presented in the remaining sessions.

#### **SPECIAL SESSIONS ON EDUCATION AND MANAGEMENT:**

At a time when our engineering educational system is being re-evaluated due to the technological progress in other countries, the Engineering Education Session papers will be both stimulating and challenging to those within the profession. During the present competitive-type recovery period of business, effective management is becoming increasingly important, consequently, the Engineering Management Session will be extremely valuable to all attending.

**REGISTRATION** facilities will be located on the Mezzanine of the Lord Baltimore Hotel. **For those arriving on May 18, the Registration Desk will be open from 7:30 p.m. until 9:30 p.m. During the meeting, registration hours will be from 8:00 a.m. to 4:00 p.m., except on the final day, Thursday, May 21, when the Registration Desk will close at 12:00 Noon.** Registration fees: Members \$3.00; Non-members \$5.00; Student Members—no fee, Wives of registrants—no fee.

Please return your Advance Registration card early with an indication of the activities that you plan to attend. This will give the committees an opportunity to make adequate provisions for all affairs. Do not send money with registration. It is recommended that immediately upon completing registration at the hotel, you procure tickets for the Inspection Trips, the Smoker, the Dinner-Dance, and the Ladies' Activities.

*Continued on page 7*



## ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40c each (80c each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$10 denominations are available for those who wish to avoid remittance by check or otherwise. The Transactions Papers will also be published in the bimonthly publications.

Note: Unnumbered District Papers (DP.\*) 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 COMMUNICATIONS AND ELECTRONICS.
- II APPLICATIONS AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

## Tuesday, May 19

### 10:00 a.m.—General Session

Calvert Room  
PAUL L. BETZ, General Chairman

Greetings. B. R. Teare, Vice-President.  
Institute Plans. President L. F. Hickernell.  
Address.

### 2:00 p.m.—Computers and Automatic Programming—I

Fairmount Room  
GEORGE B. FALLON, Session Chairman

- 59-641. The Use of Automatic Programming Techniques for Solving Engineering Problems. J. T. Carleton, N. Chacken, T. W. Martin, Westinghouse Electric Corp.
- DP.\* Current Status of Automatic Programming for Data Processing Problems. Dr. G. M. Hopper, Remington Rand UNIVAC.
- DP.\* Automatic Programming Systems. Col. Alfred Asch, USAF.
- DP.\* Fortran—A Close Look At An Automatic Coding System. J. T. Ahlin, W. P. Heising, IBM Corp.
- DP.\* Pilot—The New NBS Multi-Computer Data Processing System. A. L. Leiner, W. A. Notz, J. L. Smith and A. Wineberger, National Bureau of Standards.



Treadway Inn, Annapolis, Md.

### 2:00 p.m.—Power Stations and Substations

Federal Hill Room  
DONALD H. SANDELL, Session Chairman

- DP.\* Discharge Electrodes for Electrostatic Precipitators. J. S. Lagarias, Koppers Co.
- DP.\* Selection, Operation and Maintenance of Station Control Batteries. Williams C. Wheeler, Baltimore Gas & Electric Co.
- CP58-1287. Evaluation of Two Basic Shapes of Conductor Grooves for Aluminum Power Connectors. Walter Frank and M. R. Monashkin, Burndy Corp.
- 58-1288. Preparation of Aluminum Conductors for Stable Electrical Connections. M. R. Monashkin, Burndy Corp.
- 58-1197. Design and Analysis of Unplated High-Pressure Limited-Area Bolted Electric Joints—Including a Method of Calculating the Various Components of Joint Resistance. R. K. Allen, General Electric Co.

### 2:00 p.m.—Power Systems Operation

Founders Room  
W. M. HANNA, Session Chairman

- DP.\* AC Network Size as Determined by Service Restoration Considerations. Henry D. Cassard, Jr., Baltimore Gas & Electric Co.
- DP.\* Practical Microwave Applications to Utility Problems. D. F. Burnside, Westinghouse Electric Corp.
- DP.\* Automatic Peaking Plant. B. H. Hefner, General Motors Corp.
- DP.\* Automatic Assembly of General System Trouble Reports. C. D. Alvey, Baltimore Gas & Electric Co.

### 2:00 p.m.—Industrial Equipment and Controls—I

Mt. Vernon Room  
IRVIN L. COOTER, Session Chairman

- DP.\* Technological Advances in Packaged Electrical Adjustable Speed Drives. V. R. Murphy, Reliance Electrical and Engineering Co.
- DP.\* Low Voltage Single Phase Power Systems for Transportation Equipment. W. J. Kutcher, Square D Co.
- DP.\* Electrical Equipment Selection—A Case History for Cement Plants. W. E. Korsan, Allis Chalmers Mfg. Co.
- DP.\* Static Control Equipment for Precise Frequency Conversion Motor Generator Set. R. L. Robertson and P. D. Brohaugh, Allis Chalmers Mfg. Co.
- DP.\* Static Power Supply for 150 Horse Power DC Motor. R. P. Lange and W. E. Cronquist, General Electric Co.

### 2:00 p.m.—Measurements and Testing—I

Phoenix Room  
ALLEN H. KIDDER, Session Chairman

- DP.\* Design Considerations for Automatic Electronic Test Equipment. D. H. MacDonald and D. E. Schwartz, Bendix Radio.
- DP.\* Instrumentation and Control System for the Westinghouse Testing Reactor Critical Experiment. Frank L. Kelly, Westinghouse Electric Corp.
- DP.\* A Non-Mechanical Device for Totallizing Electrical Impulses. M. F. Borleis, Baltimore Gas & Electric Co.

- DP.\* Relay Logic Circuits in Missile System Simulators. Warren E. Mann, Aircraft Armaments.
- DP.\* Planning Reliability Into a New Relay Component. W. H. Lesser, General Electric Co.

### 2:00 p.m.—Satellite Tracking

Calvert Room  
DR. FRANK SMITH, Session Chairman

- DP.\* Low Signal Level Missile Instrumentation. L. G. DeBey, Aberdeen Proving Ground.
- DP.\* AESOP—An Artificial Earth Satellite Observation Program. Roger L. Easton, U. S. Naval Research Laboratory.
- DP.\* Doploc Tracking Filter. V. W. Richard, Aberdeen Proving Ground.
- DP.\* Microlock Capabilities and Limitations. William F. Sampson, Hallamore Electronics Co.
- DP.\* ELSA, a Dual Purpose Receiver for Satellite Instrumentation. K. H. Patterson, Aberdeen Proving Ground.

## Wednesday, May 20

### 9:00 a.m.—Measurements and Testing—II

Phoenix Room  
DR. E. F. WOLF, Session Chairman

- DP.\* A New Naval Facility for Measuring Stray Magnetic Fields. William W. Anderson, U. S. Naval Engineering and Experiment Station.
- DP59-642. A Thickness Indicator for Electroless Plating. John R. Hunsberger and A. F. Welch, General Motors Corp.
- DP.\* Test Equipment Design Philosophy. Gordon Walker, General Electric Co.
- DP.\* An Economical 230 kv Metering Installation With Remote Indication of Kilowatt Hours. M. F. Borleis, Baltimore Gas & Electric Co.

### 9:00 a.m.—Power Transmission and Distribution—I

Calvert Room  
GENERAL L. G. SMITH, Session Chairman

- 59-643. Radio Influence Voltages Caused by Surface Imperfections on Single and Bundled Conductors. T. W. Liao, General Electric Co.
- DP.\* Economic Factors in Power Transmission. R. C. R. Schulze, Assistant Chief Engineer, Atlantic City Electric Co.
- 58-1274. Tests on Protective Gaps for Distribution Series Capacitors. H. E. Weaver, Commonwealth Edison Co. and N. M. Neagle, General Electric Co.
- 58-1242. Two Examples of Industrial Research in France Relating to the Transmission of Electrical Energy. Francois N. Cahen and Roger A. Tellier, Electricite de France.
- 59-644. A New Approach to the Calculation of the Lightning Performance of Transmission Lines—II. Dr. C. F. Wagner and A. R. Hileman, Westinghouse Electric Corp.

### 9:00 a.m.—Industrial Equipment and Controls—II

Mt. Vernon Room  
C. T. PEARCE, Session Chairman

- DP.\* Multiple Channel Control and Indication Systems Utilizing One Single Pair of Wires. Addison Davidson, FEMCO, Inc.
- DP.\* Type HWR DC Crane Hoist Control for AC Power Installations. Clark C. Davies and A. H. Myles, Square D Co.
- DP.\* Arc Suppression Techniques and Devices. F. Miller, Control Systems Engineer, Square D Co.
- DP59-645. Electro-Magnetic Brake with Controllable Torque. C. A. Lister, Square D Co.

### 9:00 a.m.—Feedback Control Systems

Founders Room  
ADAM KEGEL, Session Chairman

- 59-646. Predicting the Performance of a Wind Tunnel Regulating System Using an Analog Computer. R. Herbst, J. O. Nichols, F. W. Keay and R. W. Miller, Westinghouse Electric Corp.
- 59-647. A New Chart Relating Open and Closed Loop Frequency Responses of Linear Control Systems. C. F. Chen and D. W. C. Shen, University of Pennsylvania.
- CP58-1302. Digital Computer Study of Third Order Non-Linear Servo Mechanism. Y. H. Ku and K. Fukunaga, University of Pennsylvania.

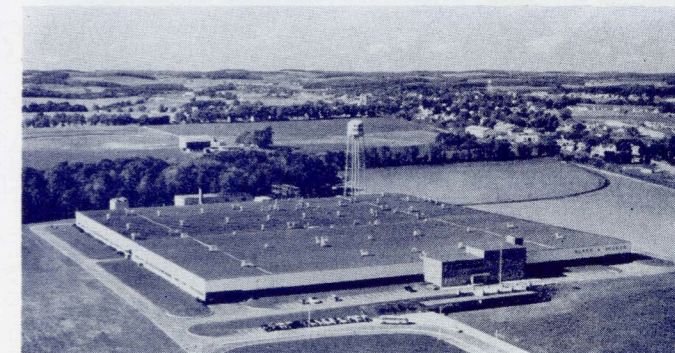
- DP59-648. Near Optimum Characteristics of A Series Motor Relay Servo. P. Goslow, A. P. Stockebrand and G. J. Thaler, U. S. N. Postgraduate Engineering School.

- 59-649. Stability Criteria for Instrument Servo Mechanisms With Coulomb Friction and Stiction. M. P. Pastel and G. J. Thaler, U. S. N. Postgraduate Engineering School.

### 9:00 a.m.—Engineering Management—I

Federal Hill Room  
DR. F. HAMBURGER, JR., Session Chairman

- DP.\* Management Looks at Productive Maintenance. C. E. Sutton, Jr., General Electric Co.
- DP59-650. Effective Organization—A Case History. William R. Brown, The Martin Co.
- DP59-678. Peripheral Professional Problems of a Manager of Engineering. C. F. Savage, General Electric Co.
- DP.\* Design in the Evolution of Products. George A. Beck, General Electric Co.
- DP.\* Use of Statistical Methods in Product Engineering. Donald E. Garrett, General Electric Co.



Black and Decker Mfg. Co., Hampstead, Md.



## 9:00 a.m.—Switchgear

Fairmount Room  
WILBUR C. FEASTER, Session Chairman

- DP.\* Developments in Metal Clad Switchgear. J. J. Torbit, General Electric Co.
- DP59-652. A New Regulator By-Pass Switch. W. C. Davis, General Electric Co.
- 59-679. A Line of Outdoor Single Tank Oil Circuit Breakers for 14.4 III Through 46 kv Service. C. J. Balentine, General Electric Co.
- DP59-653. Magnetic Loop Contacts for Outdoor Group Operated Switches. Eugene Gorin, MEMCO Engineering & Mfg. Co.
- 59-654. Aluminum Bus for Shipboard Application. G. J. Thompson II and S. H. Behr, New York Naval Shipyard.

## 2:00 p.m.—Microwave Systems and Equipment

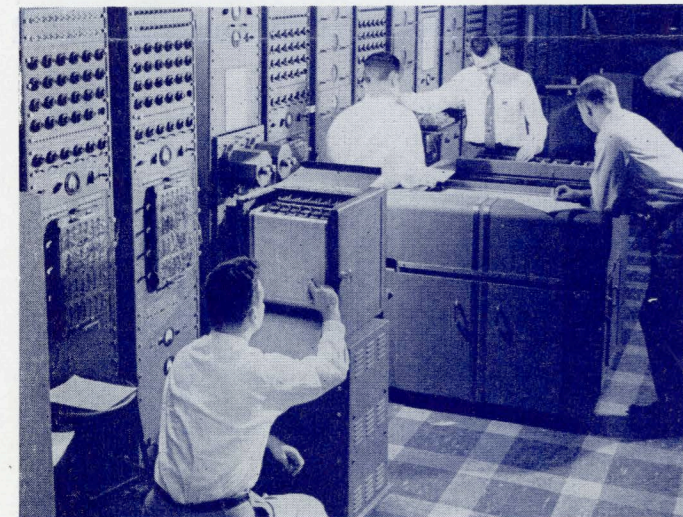
Calvert Room  
W. C. WARMAN, Session Chairman

- DP.\* Transistor Audio Tone Equipment Design Techniques. R. H. Kline, Westinghouse Electric Corp.
- DP.\* Design of Directional Couplers for Use in Microwave Test Equipment. George L. Allerton, Western Electric Co.
- DP.\* A New High Capacity Microwave Relay System. C. G. Arnold, H. R. Mathwich, R. F. Privett and L. E. Thompson, RCA and D. E. Isaac, RCA-Victor Ltd.

## 2:00 p.m.—Computer Application In the Electric Power Industry

Fairmount Room  
WILLIAM C. MARBLE, Session Chairman

- DP.\* Location of Shunt Capacitors on a Loss Reduction Basis Utilizing an IBM 650. L. J. Rankine, IBM.
- DP59-655. New Computer Programs Expand the Service Available to the Utility Industry. R. W. Long, R. T. Byerly and L. J. Rindt, Westinghouse Electric Corp.
- DP.\* Natural Frequencies of Stacks Calculated by Means of the Digital Computer. D. D. Williams and Miss L. M. Benson, Baltimore Gas & Electric Co.



Westinghouse Electric Corp., Air Arm Division.

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

## 2:00 p.m.—Rotating Machinery—I

Founders Room  
R. H. RILEY, JR., Session Chairman

- DP59-656. Failure of Commutator Leads on High Speed Armature. R. L. Claggett and J. L. Bennett, Black & Decker Mfg. Co.
- CP59-126. A Bridge Circuit for Measuring Temperature of Alternating Current Energized Windings. R. E. Seely, General Electric Co., Fort Wayne, Indiana.
- 59-657. Torsional Vibrations of Motors Geared to Compressor Drives. III P. B. Thames and T. C. Heard, General Electric Co.
- DP.\* Thermal and Overload Protection of Hermetic Motors in Air Source Heat Pump Compressors. V. H. Eargle, General Electric Co.

## 2:00 p.m.—Electrical Systems for the Metals Industry

Mt. Vernon Room  
T. S. NOVAK, Session Chairman

- DP.\* Continuous Cable Stranding and Induction Stress Relieving. G. F. Bobart and S. V. Stickler, Jr., Westinghouse Electric Corp.
- DP.\* Design of DC Motors for Modern Slabbing Mill. R. M. Dunaiski, General Electric Co.
- DP.\* Programming Control for the Steel Industry. P. A. Travisano, General Electric Co.
- DP.\* Speed Regulation Equipment on a Hot Strip Mill. A. J. Wu- been, Allis Chalmers Mfg. Co.
- DP59-658. Innovations in Control of Continuous Steel Processing Line. W. A. Duerkop, United States Steel Corp.
- DP.\* Magnetic Amplifier Control for Electric Arc Furnaces. R. A. Geiselman, Westinghouse Electric Corp.

## 2:00 p.m.—Epoxy Resins for Cable Systems

Phoenix Room  
J. W. ANDERSON, Session Chairman

- 59-659. Epoxy Resin—Orlon Cable Terminations for 33 kv Service. III P. L. Betz, O. W. Lusby, J. J. Rueckert, J. F. Foley and M. B. Gordon, Baltimore Gas & Electric Co.
- 59-660. Epoxy Resin—Orlon Cable Terminations for 4 kv Service. III J. J. Rueckert, O. W. Lusby and P. L. Betz, Baltimore Gas & Electric Co.
- DP59-661. Miscellaneous Joints and Terminations Using Epoxy Resin—Orlon Insulation. H. E. Ziegenfuss, J. J. Rueckert, O. W. Lusby and P. L. Betz, Baltimore Gas & Electric Co.
- DP59-662. Cable Sheath and Accessory Repairs Using Epoxy Resin—Orlon Tape. T. J. Claggett, J. J. Rueckert and O. W. Lusby, Baltimore Gas & Electric Co.

## 2:00 p.m.—Transformers—I

Federal Hill Room  
J. M. JESATKO, Session Chairman

- DP.\* The V/g Design Applied to a 7500 kva 34.5 kv Transformer. C. Wasserman, Baltimore Gas & Electric Co. and J. W. Dickens, Westinghouse Electric Corp.
- DP.\* Sound Control for Medium Transformers. T. J. Twomey, General Electric Co.
- 59-663. Correlation of Forced and Free Oscillations of Coils and III Windings. P. A. Abetti, General Electric Co.
- 59-664. Measurement of Ambient Air Temperature During Temperature Rise Tests on Transformers. Martin F. Beavers, General Electric Co.

## Thursday, May 21

## 9:00 a.m.—Computers and Automatic Programming—II

Fairmount Room  
A. L. KARPINSKI, Session Chairman

- 59-665. SPUD—A Stored Program Universal Demonstrator for Computer Training. M. Raspanti, Bell Telephone Laboratories.
- DP.\* A Generalized Scanner for Character and Pattern Recognition Studies. W. H. Highleyman, Bell Telephone Laboratories.
- DP.\* A Radar Information Recording Device. B. L. Harris, Westinghouse Electric Corp.
- DP.\* A Data Comparison and Logging System. James L. Russell, Bendix Aviation Corp.
- DP.\* Electrical Engineering Applications on Digital Computers. Lee Garbrick, Burroughs Corp.

## 9:00 a.m.—Power Systems Dispatching

Founders Room  
W. M. HANNA, Session Chairman

- CP58-1282. New Load Dispatching Center for the Philadelphia Electric Co. System. W. H. Johnson, Philadelphia Electric Co.
- 58-1163. Automatic Dispatching Systems. M. J. Brown, Westinghouse III Electric Corp.
- DP.\* A Digital Computer Solution of Economic Dispatching and Interchange Billing. F. J. Sherman and W. B. Tegen of the Boston Edison Co.

## 9:00 a.m.—High Voltage Bushings

Federal Hill Room  
MERRILL G. CULVER, Session Chairman

- 59-666. Correttes Models for Obtaining Electrical Data on Insulation III for Bushings. R. D. Alvord, General Electric Co.
- DP59-640. Development of a 2050 kv BIL Bushing. P. B. Shade, General Electric Co.
- DP59-667. Representation of Dielectric Boundaries and Cylindrical Fields on Teledeltos Field Plotting Paper. F. D. Martzloff, General Electric Co.
- DP.\* Bushing Potential Device with Multiple Ratings and Universal Application. K. W. Eissmann, General Electric Co.

## 9:00 a.m. Industrial Equipment and Control—III

Mt. Vernon Room  
A. G. HOYT, Session Chairman

- DP.\* Safety by Isolation in Industrial Motor Control. W. C. Wilkinson and L. J. Woodward, Rowan Controller Co.
- DP59-669. The Development of a Heavy Duty Safety Switch. W. E. Keating, Square D Co.
- DP.\* Applications of Proximity Limits Switches. George Q. Lofgren, Square D Co.
- DP.\* Combination Regulator Design and Application. R. E. Leyton, Clark Controller.
- DP59-670. Characteristics of the 50 Ampere Silicon Controlled Rectifier—A new Component for Control Applications. R. F. Dyer, General Electric Co.

## 9:00 a.m.—Semiconductors and Circuits

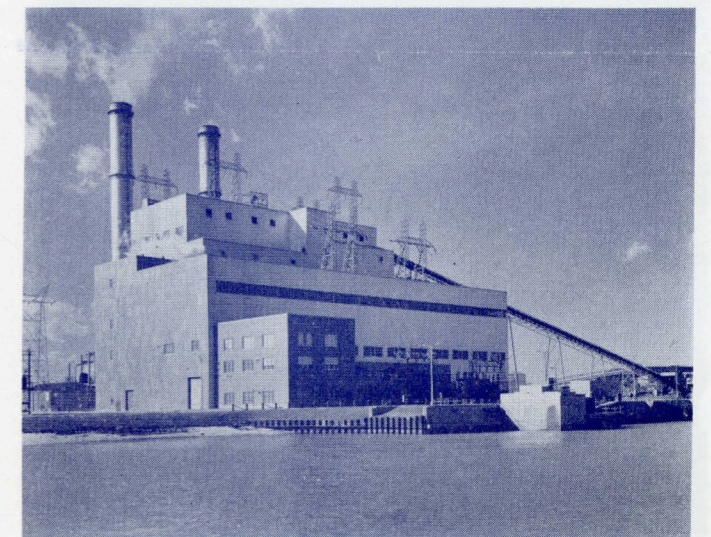
Phoenix Room  
PAUL F. PITTMAN, Session Chairman

- DP.\* A Transistorized Power Supply for a Radar Modulator. R. W. Sedgwick, Bendix Aviation Corp.
- DP59-671. An Investigation of the Dynamic Switching Properties of Four-Layer Diodes. G. E. McDuffie, Jr., W. L. Chadwell, The Catholic University of America.
- DP.\* A Pulse Code Modulation Instantaneous Compandor. H. M. Straube, Bell Telephone Laboratories.
- DP.\* A Non Linear Pulse Code Modulation Encoder. H. Mann, Bell Telephone Laboratories.
- DP59-639. Design Parameters for Weather Resistant Electrical Connectors. L. L. Resser and M. J. Smith, The Martin Co.

## 9:00 a.m.—Engineering Education

Calvert Room  
J. F. CALVERT, Session Chairman

- DP.\* AIEE in Electrical Engineering Education—Yesterday or Tomorrow? T. M. Linville, General Electric Co.
- DP.\* Education for Exploding Challenges in Electronics. G. A. Richardson, Worcester Polytechnic Institute.



Herbert A. Wagner Generating Station, B G & E Co.



DP.\* IRE in Electrical Engineering Education—What is its Role? R. L. McFarlan, Consulting Engineer.

DP.\* Education for Expanding Horizons in Electric Power. G. S. Brown, Massachusetts Institute of Technology.

**2:00 p.m.—Electronic Equipment and Amplifiers**  
Fairmount Room  
F. J. EULER, Session Chairman

DP.\* High Powered Audio Applications. R. W. Clifford and T. J. Hayes, Westinghouse Electric Corp.

DP.\* Response of Band Pass Feedback Amplifiers. L. A. Nix, Jr., Westinghouse Electric Corp.

DP.\* Magnetic Amplifier Control of an X-Ray Tube. P. A. Duffy, Westinghouse Electric Corp.

DP.\* Radiation Dosage Metering in X-Ray Tables. E. L. Webb, Westinghouse Electric Corp.

59-672. An Equivalent Circuit for Transformers in Which Non-Linear I Effects are Present. H. W. Lord, General Electric Co.

**2:00 p.m.—Television**  
Phoenix Room  
W. A. MacCREHAN, Session Chairman

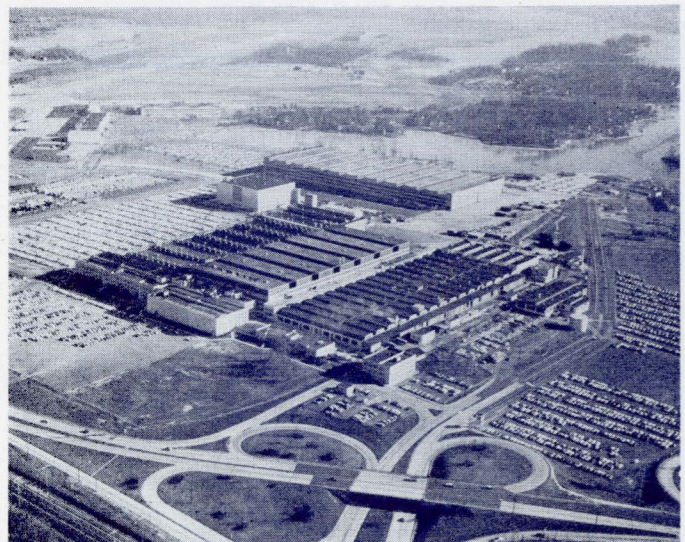
DP.\* A Medium Haul Private Microwave System for Television. John B. Bullock, RCA.

DP.\* The Application of Television at Low Light Levels. B. A. Bang, Bendix Friez.

DP59-673. A Procedure for the Selection of Terminating Impedances of Tuned Transistor Amplifiers. John G. Humphrey, General Electric Co.

DP.\* Video Instruction Techniques. Frederick J. Beste, Jr. and W. F. Jacob, Jr., Maryland Tele-communications, Inc.

59-674. Experience with Long Distance Television Fields Used for I Retransmissions. W. L. Braun, Shenandoah Broadcasting, Inc.



The Martin Co., Baltimore, Md.

**2:00 p.m.—Rotating Machinery—II**  
Founders Room  
J. L. BENNETT, Session Chairman

DP59-675. An Approach to the Evaluation of Insulation Systems in Portable Electrical Tool Motors. C. L. Gough and James W. Marshall, Black & Decker Mfg. Co.

DP.\* Insulation System Development Aided by Mortorette Tests. P. J. Lucey and G. T. Gibson, Westinghouse Electric Corp.

DP.\* New Insulation for Cement Plant Motors. R. B. Chappell, Allis Chalmers Co.

DP59-651. An Unusual Method for Replacing a Rotor Spider in a Waterwheel Generator. P. M. Bell, Westinghouse Electric Corp., and W. R. Small, Jr., Pennsylvania Power & Light Co.

**2:00 p.m.—Engineering Management—II**  
Federal Hill Room  
DR. W. C. GORE, Session Chairman

DP59-676. Educating Electrical Engineers for the Nuclear Age. Joseph C. Michalowicz, Catholic University of America.

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

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

DP59-677. Russian Electrical Engineering Vocabulary. Mrs. B. O. Buckland, General Electric Co.

**2:00 p.m.—Power Transmission and Distribution—II**  
Calvert Room  
G. C. McCABE, Session Chairman

DP.\* Baltimore Harbor Tunnel—Electrical Facilities. W. B. Donat.

DP.\* Twenty Years Experience with Neoprene in the Wire and Cable Industry. C. E. McCormack, E. I. duPont deNemours Co.

CP58-1254. First Report on Corrosion Tests of a New Steel Wire With Thick Aluminum Covering. J. G. Cavanagh, Copperweld Steel Co.

DP.\* Spray Application of Silicone Grease to Prevent Insulator Surface Contamination. R. H. Lester, General Electric Co.

DP.\* The Teinograph—A New High Voltage Surge Recorder. J. G. Anderson and Ramo U. Giacomi, General Electric Co.

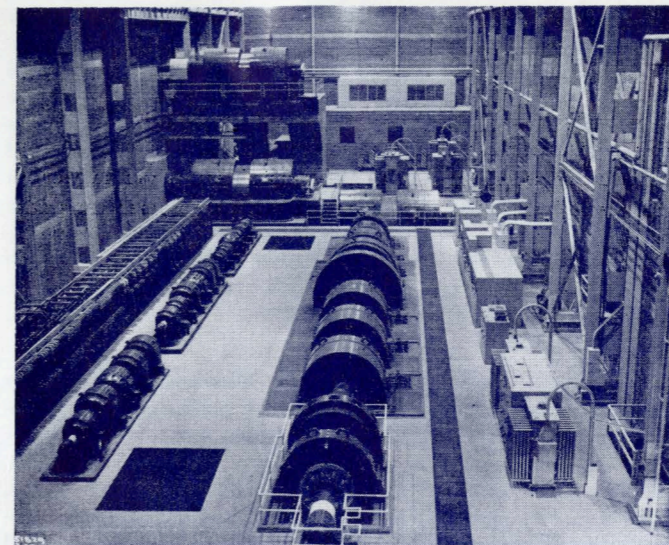
**2:00 p.m.—Transformers—II**  
Mt. Vernon Room  
C. S. RANDALL, Session Chairman

DP.\* Are Reduced Insulation Transformers Safe? S. R. Lindgren, Allis Chalmers Mfg. Co.

58-1169. Are Stabilizing Windings Necessary in All Wye Connected III Transformers. B. A. Cogbill, General Electric Co.

DP.\* Operation of the Three Phase Wye Wye Distribution Transformers Under Abnormal Conditions. G. F. Renoff and W. P. Taylor, Baltimore Gas and 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.



Bethlehem Steel Co., Sparrows Point, Md.

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**HOTEL RESERVATIONS:** A block of rooms has been set aside at the Lord Baltimore Hotel, Baltimore and Hanover Streets, to accommodate those planning to attend the Conference. The hotel reservation card should be completed and returned promptly to the Lord Baltimore Hotel. Rates per day are as follows:

Single Room (One Person).....	\$ 8.00 to \$14.00
Double Room—Double Bed (Two Persons).....	9.50 to 18.00
Double Room—Twin Beds (Two Persons).....	11.00 to 18.00
Suites—Parlor, Bedroom and Two Baths.....	23.00 to 37.00

**SOCIAL ACTIVITIES:** On Tuesday evening, May 19, there will be a **Smoker** in the Calvert Ballroom of the Lord Baltimore Hotel. The cocktail hour will start at 6:30 p.m. and dinner will be served immediately thereafter. Following dinner, there will be an entertaining floor show with a variety of acts including dancing and singing damsels, all capably introduced by an outstanding Master of Ceremonies. Each act has been reviewed and carefully selected so as to meet with your approval. This Smoker, priced at \$7.50, promises to be a superlative evening, and one that should not be missed.

On Wednesday evening, May 20, the mammoth **Dinner-Dance** will be held in the Calvert Ballroom of the Lord Baltimore Hotel. Cocktails will be available until the dinner starts at seven o'clock. The dance will start at nine o'clock and continue until one o'clock. Music will be by a well-known orchestra. The price is \$7.50 per person. Set-ups will be available during the dance.

**LADIES' PROGRAM:** An interesting program for the wives of the men attending the Middle Eastern District meeting has been carefully planned by Mrs. Paul Betz and her Ladies' Committee.

Tuesday morning, there will be a prolonged **"Coffee Hour"** in the Ladies' Hospitality Rooms. Hostesses will be in attendance to greet our guests. There will not be scheduled entertainment during the opening day as the Committee feels that the ladies would enjoy visiting our department stores and shops, or possibly the Walter's Art Gallery. The latter is situated at Mt. Vernon Place, which is recog-

nized for its famous statues throughout the East. The Peabody Conservatory of Music and the Maryland Historical Society are located on this famous Square! Anyone of the hostesses will be happy to accompany our guests, or if she wishes to explore our lovely city alone, give her complete information. We are at your disposal! An interesting sightseeing tour of the city can be arranged at a nominal cost. At six o'clock, we will gather for cocktails and a delicious **dinner** followed by a **Card Party**. The Committee has planned a delightful evening for the ladies while their husbands attend the Smoker.

Wednesday morning, a **"Coffee Hour"** will be held in the Hospitality Rooms, followed by an all-day **trip** to historic Annapolis, the Capital of Maryland and the site of the United States Naval Academy. Busses will leave the hotel and go via "Old Towne" (Early Baltimore) and through the Harbor Tunnel. Emerging from the tunnel the route will be over super highways, past shipbuilding drydocks onto Ritchie Highway. Your first glimpse of Annapolis from the highway will not soon be forgotten. Our first stop in Annapolis will be for luncheon at the Treadway Inn. After luncheon, we will have a **tour** of Annapolis, famous for its Colonial architecture, and a visit to the Governor's Mansion. Thence, to the Naval Academy, where we will witness a full dress parade of the entire Midshipman Brigade. Arrangements have been made for our party to have seats in an excellent location on the Parade Grounds. We will return to Baltimore by bus to rejoin our husbands for the gala **dinner-dance** that evening.

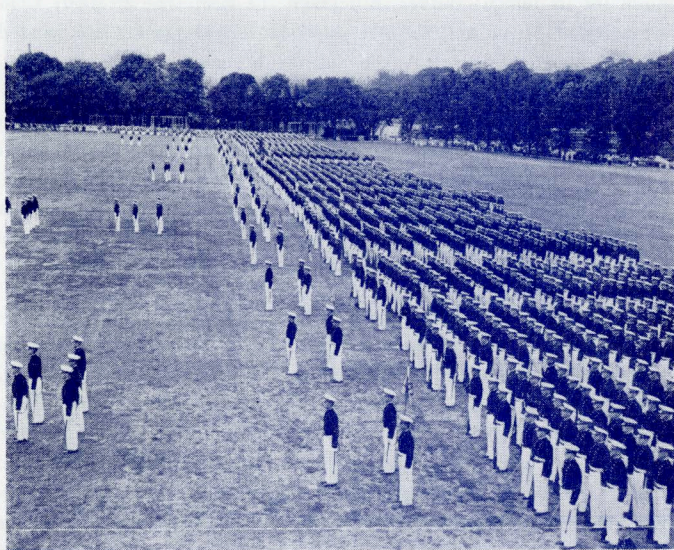
Thursday morning, there will be a final **"Coffee Hour"** in our Hospitality Rooms. A warm welcome is extended to the ladies and we sincerely hope you will arrange to join us. Kindly drop a line to Mrs. Paul Betz, Chairman, Ladies' Committee, 1113 Argonne Drive, Baltimore 18, Maryland, telling her you wouldn't miss this meeting for the world.



Ballistics Research Labs., Aberdeen Proving Ground.



# MIDDLE EASTERN DISTRICT MEETING



U. S. Naval Academy, Annapolis, Md.

**INSPECTION TRIPS:** A program of inspection trips of both technical and general interest has been arranged that should appeal to one and all. Because the number of persons who may be accommodated on each of these trips is limited, you are urged to make arrangements and obtain full details at the Inspection Trips Desk immediately after registering at the Lord Baltimore Hotel.

**Black & Decker Manufacturing Company, Hampstead, Md. (Tuesday Afternoon).** B & D is the world's largest plant devoted exclusively to the manufacture of electric tools. The tour will consist of a guided inspection of all manufacturing and assembly operations and facilities. In its course, visitors will see such steps in the manufacturing of B & D products as motor winding, sheet metal working (high speed lamination presses), automatic buffing of aluminum castings, a conveyorized paint system with bonderizing ovens, steel coil slitting operations, forging operations, tool assembly, inspection and packaging. Side trips will be made to the plant's power house and substations. Sufficient time will be available for a question and answer session at the end of the tour. Lunch will be served in the B & D cafeteria at 1:30 p.m. Bus leaves Lord Baltimore Hotel at 12:00 Noon, returns 5:15 p.m. Reservation \$2.50 (complimentary lunch included).

**Westinghouse Electric Corp., Air Arm Div., Baltimore, Md. (Tuesday Afternoon).** The Air Arm Division of Westinghouse is engaged in the development, design, and manufacture of military airborne electronics systems in the following categories: fighter armament control, bomber defense, missile guidance, flight control, special purpose systems, and astronautics. A guided inspection of the most interesting parts of this tremendous plant will include the Engineering Laboratory where there is environmental testing equipment; the vacuum impregnation of silicon vinyls, epoxy, and "Fosteriting" which is a patented Westinghouse process for encapsulating transformers for high temperature as well as a protection against moisture; and the Plating Room which has facilities for the process of etching printed circuits using either chronar or mylar film negative and sensitized boards. Also included is the power house which employs the network type of distribution for plant power. Lunch will be served in the Westinghouse Cafeteria prior to starting this tour. Bus leaves Lord Baltimore Hotel at 12:30 p.m., returns 4:15 p.m. Reservation \$1.50 (complimentary lunch included).

**Herbert A. Wagner Generating Station—Baltimore Gas & Electric Company (Wednesday Morning).** The Herbert A. Wagner Electric Generating Station, located on the south side of the Patapsco River about seven miles southeast of the center of Baltimore City, is the newest plant on the Baltimore Gas & Electric Company's system. The first turbine generator, rated at 125,000 kw, was placed in commercial operation early in 1956, and a second similar unit went on the line January 20, 1959. The throttle steam conditions for both units are 1800 psig and 1000°F, with reheat to 1000°F. Each generator is connected to a 160,000 KVA autotransformer through which its output is fed into the Company's 110,000-volt transmission system. Bus leaves Lord Baltimore Hotel at 8:30 a.m., returns 11:45 a.m. Reservation \$1.50.

**The Martin Company, Baltimore, Maryland (Wednesday Morning).** The Space Flight, Nuclear, and Baltimore Divisions, located on an 1,100-acre tract east of Baltimore, presently employ 19,000 persons. This facility includes its own privately-owned airport and seaport. Products include nuclear power supplies, jet seaplanes, various missiles, space vehicles, electronic systems, and ground support equipment for missiles, rockets, and aircraft. These visitors will see airframe, electrical and electronic manufacturing areas, electrical tooling and testing, parallel operation of airborne a-c generators, the electrical test facility, and the seaplane launch area. Bus leaves Lord Baltimore Hotel at 8:15 a.m., returns 12:45 p.m. Reservation \$1.50.

**Bethlehem Steel Company, Sparrows Point, Maryland (Wednesday Afternoon).** The Bethlehem Sparrows Point plant is the largest steel plant in the world. This plant consumes 1/400 of all the electric power generated in the nation and it is said that if the plant's electric power lines were strung end to end they would reach halfway around the world. The guided tour will include the coke oven area, Open Hearth No. 4, the new slatting mill, the new plate mill, Tandem Mill No. 3, the 68-inch hot strip mill and the tinning lines. Lunch will be served at the plant at 1:15 p.m. Bus leaves Lord Baltimore Hotel at 12:30 p.m., returns 5:15 p.m. Reservation \$1.50 (complimentary lunch included).

**Ballistic Research Laboratories, Aberdeen Proving Ground, Aberdeen, Md. (All Day Thursday).** The Ballistic Research Laboratories were established by the Ordnance Department for basic and technical research in ballistics, the related fields of physics, chemistry, mathematics, and engineering. A guided tour will include the Computing Laboratory where the firing tables for artillery and guided missile weapons are prepared; the Free Flight Range for the measurement of aerodynamic forces; the first Supersonic Wind Tunnel built in this country large enough for practical tests of projectile and guided missile models, and the Satellite Tracking Station where there are instruments capable of tracking current satellites for several thousand miles and with a theoretical capability of tracking a space ship to the moon. The tour will close with a visit to the Ordnance Museum. Lunch will be served in the dining room. Bus leaves Lord Baltimore Hotel at 8:30 a.m., returns 5:00 p.m. Reservation \$3.50 (transportation \$2.50, lunch \$1.00).

**GENERAL COMMITTEE:** Paul L. Betz, Chairman; Paul P. Ives, Secretary; Howard A. Frey, Technical Meetings & Papers; Thomas W. Trice, General Sessions; Thomas H. Marshall, Jr., Arrangements; William B. Mann, Finance; Charles B. Bechtel, Registration; Raymond C. Desor, Inspection Trips; Louis J. Frisco, Student Activities; L. Joseph Huettel, Entertainment; Mrs. P. L. Betz, Ladies' Activities; James I. Elliott, Publicity; George H. Carden, Section Chairman.

Issued by  
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS  
33 West 39th Street, New York 18, N. Y.

PRINTED IN U.S.A.