Winter General Meeting

January 18-22, 1954

Headquarters
Hotel Statler

The AIEE Winter General Meeting to be held at the Hotels Statler and McAlpin in New York, N. Y., January 18th to 22nd, will feature the largest technical program in the history of the Institute. The social activities, for which this meeting has also been known, will again be one of the outstanding features. A group of varied and interesting inspection trips has also been arranged, closely allied with the technical sessions.

INFORMAL TEA: Inaugurated last year, this social gathering before the formal program begins was enjoyed by many members and guests. It is hoped that more will participate this year—on Sunday afternoon, January 17, from 4 to 6 p.m., in the Georgian Room of the Statler. There will be no charge.

During this same period the registration facilities will be open for those wishing to avoid the Monday morning rush.

HOTEL RESERVATIONS: Blocks of rooms have been set aside at the Hotel Statler (meeting headquarters) and nearby hotels for members and guests attending the meeting. Requests for reservations should be sent prior to January 8 directly to the hotel of choice and to only one hotel. AIEE should be mentioned in the request and a copy sent to the vice-chairman of the Hotel Accommodations Committee, D. V. Buchanan, Room AU16, Consolidated Edison Company of New York, Inc., 4 Irving Place, New York 3, N. Y. A second and third choice should be noted on this copy.

Due to the current accommodations situation in New York hotels, reservations for arrival on Sunday, January 17, are suggested. If the accommodations at the hotel requested are not available, the Hotel Accommodations Committee will transfer the request to one of the other hotels on the list.

Hotel rooms have been reserved at the following:

Hotel Statler (meeting headquarters), 7th Avenue, 32nd to 33rd Sts.	
Single room with bath	$ 6.00 to $11.00
Double room, double bed	8.00 to 14.00
Double room, twin beds	9.00 to 16.00
Studio type	15.00 to 18.00
Parlor suites	25.00 to 27.00
Hotel Governor Clinton, 7th Avenue at 31st Street	
Single room with bath	$ 6.00 to $ 8.00
Double room, double bed	8.50 to 10.00
Double room, twin beds	10.00 to 13.00
Hotel McAlpin, Broadway and 34th Street	
Single room with bath	$ 4.50 to $ 9.25
Double room, double bed	7.00 to 13.50
Double room, twin beds	8.50 to 13.50
New Yorker Hotel, 34th Street and 8th Avenue	
Single room, tub and shower	$ 6.00 to $10.00
Double room, double bed	9.00 to 14.00
Double room, twin beds	10.50 to 16.00
Hotel Martinique, Broadway and 32nd Street	
Single room with bath	$ 4.50 to $ 7.00
Double room, double bed	8.00 to 11.00
Double room, twin beds	9.00 to 12.00
Hotel Commodore, 42nd Street at Lexington Avenue	
Single room with bath	$ 6.00 to $10.00
Double room, double bed	9.50 to 12.50
Double room, twin beds	11.00 to 15.00
Hotel Roosevelt, Madison Avenue at 45th Street	
Single room with bath	$ 6.50 to $14.00
Double room, double bed	11.50 to 17.50
Double room, twin beds	13.50 to 20.00

Rates are subject to 5 per cent New York City hotel room tax.

SMOKER: The Smoker Committee, under the chairmanship of C. F. Bolles, announces that the smoker will be held on Tuesday evening, January 19, at the Hotel Commodore. Tickets are $10 each and include gratuities. Reservations should be sent to: Smoker Committee, AIEE Headquarters, 33 West 39th Street, New York 18, N. Y. Checks should be made payable to "Special Account, Secretary, AIEE." Reservations received after January 5 will not be honored.

THEATER TICKETS: As in the past, tickets to the following shows currently playing in New York will be available to all AIEE members during the week of the meeting.

	Evenings	Wednesday Matinee
Cinerama	$4.00	$2.70
Kind Sir (comedy) Mary Martin, Charles Boyer	6.00	6.00
Wonderful Town (musical) Rosalind Russell	8.40	5.40
The Tea House of the August Moon (comedy) David Wayne, John Forsythe	6.00	4.80
Can-Can (musical)	8.40	6.00
Comedy in Music (revue) Victor Borge	6.00*	4.80
Dial M for Murder (drama) Maurice Evans	6.00*	4.80
The Seven Year Itch (comedy) Tom Ewell, Vanessa Brown	6.00*	4.80
My Three Angels (comedy) Walter Slezak	6.00	4.80
Picnic (drama, Pulitzer Prize) William Inge, Ralph Meeker	6.00*	4.80**
Rodgers and Hammerstein musicals		
Me and Juliet Isabel Bigley, Joan McCracken	8.40	5.40
The King and I Yul Brynner	8.40	5.40
South Pacific Martha Wright, George Britton	6.00	4.20

*$7.20 for Friday or Saturday.
**Thursday matinee.

All prices shown are brokers' prices.

Checks should be made payable to: "Theater Ticket Committee, AIEE." Requests also should include first and second choice of both name and date of show, and should be sent to: Theater Ticket Committee, AIEE c/o S. Friend, Jr., Anaconda Wire and Cable Company, 25 Broadway, New York 6, N. Y.

Preference will be given in order of receipt to requests for seats in blocks of pairs and the committee reserves the right to reduce requests to sell-out shows to two tickets.

All ticket requests will be acknowledged promptly and refund will be made of any money due in excess of the price of tickets purchased.

Please do not include with theater ticket applications payment for any meeting fee or other item for which remittance should be made directly to Institute headquarters.

Tickets to available radio broadcasts and television shows also will be provided at the time of registration for the meeting.

DINNER-DANCE: J. G. Derse, chairman, has announced that the dinner-dance will be held on Thursday evening, January 21, 1954, in the Grand Ballroom of the Hotel Statler. Music and general arrangements will be the same as those which proved so enjoyable last year. Dress will be formal. Plan now and write soon for reservations at tables for ten. Tickets will be $12 each. Address requests to the Dinner-Dance Committee, AIEE headquarters, 33 West 39th Street, New York 18, N. Y. Make checks payable to "Special Account, Secretary, AIEE."

LADIES' ENTERTAINMENT: The Ladies' Entertainment Committee, under the chairmanship of Mrs. E. S. Banghart, is planning a program of social events that should prove both interesting and enjoyable for the ladies. Registration will open Sunday, January 17, from 4 to 6 o'clock in the foyer of the Georgian Room, and from 9 a.m. on Monday, January 18, in Ladies' Headquarters on the mezzanine. The "Get-Acquainted" Tea will be held on Monday afternoon. Among other events, such as a trip to the United Nations, a luncheon and fashion show at the Waldorf-Astoria, and sightseeing trips, there will be a dinner with entertainment on Tuesday evening (the night of the men's smoker) in the Penn Top. Ladies are urged to send

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reservations in advance to Ladies Entertainment Committee, AIEE, 33 West 39th Street, New York 18, N. Y.

INSPECTION TRIPS: A program of inspection trips of both technical and general interest has been arranged for those attending the Winter General Meeting. Since the number of people who may be accommodated on all of these trips is limited, members who are interested are urged to make arrangements and obtain full details at the Inspection Trips Desk immediately after registering at meeting headquarters. Advance registration by mail for trips cannot be accepted. On some of the trips, proof of U. S. citizenship will be required, and members should be prepared to comply with such security regulations as may be in force at the time of the trip.

Radio City Music Hall, New York, N. Y.—(Tuesday morning, January 19)—Again we have been able to schedule this traditional trip, this year marking its fifth anniversary. Spectacular stage shows with colorful and unique lighting effects have made the Music Hall world-famous. Members will see the back stage facilities as well as the revolving sectionalized stage, elevator-type orchestra platform, motorized curtains, and the multitudinous electric and mechanical controls required to accomplish the special lighting effects. The magnitude of these operations is evident from the fact that the connected load totals 5500 horsepower in motors and 3500 kilowatts in lighting.

Federal Electric Products Co., Newark, N. J.—(Tuesday morning, January 19)—This plant is an example of modern production methods utilizing fully automatic forming, assembling, and calibrating equipment, and decentralized independent work centers. This decentralized production system has replaced the standard twentieth century type floor length assembly lines. Visitors will see the manufacture of the complete line of low-voltage circuit breakers and enclosures turned out by Federal. They will be shown multiple operation presses forming enclosures from rolls of sheet steel, plastic circuit breaker cases being formed in molding machines, and the assembling and testing of breakers in work centers.

International Business Machines Company, New York, N. Y.—(Tuesday, Thursday and Friday mornings, January 19, 21 and 22)—This trip will afford visitors an opportunity to see the latest of IBM's large calculators. Dr. G. T. Hunter of IBM will describe the functioning of their Type 701 Data Processing Machine and will answer questions relative to its operation. The inspection will be preceded by a twenty-minute film titled "Piercing the Unknown."

Steinway & Sons, Astoria, L. I., N. Y. (Tuesday afternoon, January 19)—This famous institution is celebrating its one hundreth anniversary this year. Visitors will see skilled craftsmen fitting the soundboards and iron frames of pianos, and stringing, installing and regulating the keys and action. They will also see finishing, polishing, and other specialized hand work which is the heart of the piano. An unusual opportunity to witness the work of the master artisan.

CBS-Columbia, Long Island City, N. Y. (Tuesday afternoon, January 19)—This is the television and radio receiver manufacturing division of the Columbia Broadcasting System, which is striving for a position among the leading manufacturers in the field. The operations at this plant are almost completely mechanized. A continuous flow of materials, sub-assemblies and final assemblies makes possible daily production of 2000 television and radio receivers.

Brookhaven National Laboratory, Upton, Long Island, N. Y. (Wednesday all day, January 20)—The most popular trip on last year's schedule will be repeated. The facilities at Brookhaven are operated by Associated Universities, Inc., under contract with the Atomic Energy Commission. This is the Northeastern center for nuclear research and development in the fields of physics, chemistry, biology, medicine and engineering. Among the exhibits to be seen will be the atomic pile model and the cosmotron. The Brookhaven staff has made a special request that visitors be limited to those coming from out-of-town, since local members have other opportunities during the year to inspect these facilities. Also, members must sign up for the trip by 4:30 p.m. Monday.

Lever House, New York, N. Y. (Wednesday morning, January 20)—This is one of the most unique of the many new office buildings erected in New York City during the past few years. The exterior is blue heat-absorbing glass and stainless steel. The blue glass has a functional rather than a decorative purpose since it filters out 35 per cent of the sun's heat. Many other new features make this building the essence of modern architecture. Our members will make a tour of the building itself and will have an opportunity to listen to talks by engineers on the mechanical and electric equipment involved.

Bell Telephone Laboratories, Murray Hill, N. J. (Wednesday afternoon, January 20)—Research in all fields of basic science is conducted at this location. Of special interest to visitors are the Microwave Laboratories, the Digital Computer, the Metallurgical Laboratories, and the New Telephone Instrument Laboratories. It is also expected that special demonstrations will be arranged for our members, to be determined by the projects under development at the time of the trip.

Electrolux Corporation, Old Greenwich, Conn. (Wednesday afternoon, January 20)—This plant is an outstanding example of modern manufacturing methods applied to the mass production of high quality vacuum cleaners. Particular emphasis is placed on automatic and mechanized materials handling, with every conceivable type of conveyor system employed to full advantage. To the electrical engineer interested in the rapid and efficient automatic transfer of materials in process of manufacture, this trip should prove to be most interesting.

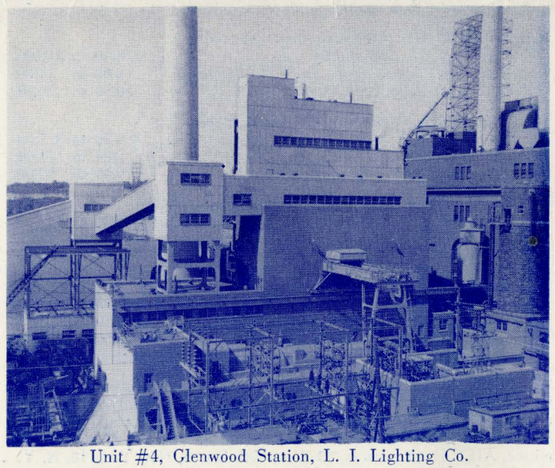
Long Island Lighting Co., Hicksville, L. I. (Thursday all day, January 21)—The Central Operating Headquarters of the Long Island Lighting Co. presently consists of five buildings: the Service Building, Operating Warehouse, Transportation Building, Motor and Test Building, and Station and Construction Shops. The Service Building features a circular semi-bomb-proof control center which enables system operators to control major generating stations and substations. The generating station, a first in the Northeast, features an outdoor turbine, a semi-outdoor steam generator equipped to burn coal, oil, or natural gas, interchangeably or simultaneously, and a central station which will be enlarged to handle a second 90/99 MW unit now under construction.

New York Stock Exchange, New York, N. Y. (Thursday morning and afternoon, January 21)—Two special trips, one in the morning, the other in the afternoon, have been arranged to permit AIEE members to visit the famous New York Stock Exchange. Talks on the operations at the Exchange will be followed by a technicolor movie titled "What Makes Us Tick." In addition, visitors will be allowed to watch the activities on the floor of the Exchange from the gallery.

United Nations, New York, N. Y. (Thursday morning, January 21)—This trip will include the regular guided tour at a reduced rate, and will be preceded by a talk on the electric equipment by a representative of the consulting engineers who worked on the design of the buildings. Many unusual features are to be seen, such as unusual lighting effects and special acoustical treatments. A complex communication system enables listeners to hear a speech, as it is being delivered, in any one of six languages by a twist of a dial.

Westinghouse Lamp Division, Bloomfield, N. J. (Thursday afternoon, January 21)—A tour of the headquarters facilities

Continued on page 12



Unit #4, Glenwood Station, L. I. Lighting Co.

TECHNICAL PROGRAM

ADVANCED COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 30c each (60c 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 $9 denominations are available for those who wish to avoid remittance by check or otherwise. Numbered papers will be published in the bimonthlies and in the Transactions. *Conference Papers* denoted by CP.** are intended for presentation only, and are not available.

Monday, January 18

10:00 a.m.—Power Generation

54-150. Minimum Excitation Limit for Magnetic Amplifier Regulating System. J. T. Carleton, P. O. Bobo and D. A. Burt, Westinghouse Electric Corp.

54-41. Magamp Regulator Tests and Operating Experience on West Penn Power System. E. W. Hand, West Penn Power Com.; F. N. McClure, P. O. Bobo and J. T. Carleton, Westinghouse Electric Corp.

CP.** Underexcited Reactive Ampere Limit for Modern Amplidyne Voltage Regulator. A. S. Rubenstein and M. Temoshok, General Electric Co.

10:00 a.m.—Distribution Systems and Lightning Protection

54-39. Evaluation of Test Data in Determining Minimum Design Requirements for Aluminum to Copper Connectors. D. C. Hubbard, R. W. Kunkle and A. B. Chance, A. B. Chance Co.

54-142. Useful Methods for Determining Primary Feed Points in Future Distribution System Planning. D. L. Hopkins and D. R. Samson, General Electric Co.

54-52. Unbalanced Loading and Voltage Unbalance on Three Phase Distribution Transformer Banks. H. M. Bankus and J. E. Gerngross, General Electric Co.

54-4. Lightning Surges on Overhead Distribution Lines Caused by Indirect and Direct Lightning Strokes. R. H. Golde, The Electrical Research Assoc.

CP.** The New Thyrite Magna-Valve Station Arrester. W. J. Rudge, General Electric Co.

10:00 a.m.—Relays

54-147. All Electronic Carrier Relaying Reduces Fault Clearing Time. H. C. Barnes, American Gas & Electric Service Corp. and L. F. Kennedy, General Electric Co.

54-111. The All-Electronic-One-Cycle Carrier Relaying System Overall Operating Principles. H. T. Seeley and N. A. Koss, General Electric Co.

54-148. All-Electronic, One-Cycle Carrier Relaying Equipment—Relay Operating Principles. M. E. Hodges and R. H. Macpherson, General Electric Co.

54-149. Performance Evaluation of all Electronic One Cycle Carrier Relaying Equipment. W. S. Price, American Gas & Electric Service Corp.; R. E. Cordray and R. H. Macpherson, General Electric Co.

10:00 a.m.—Chemical Industry

CP.** Short Cuts in Estimating Electrical Materials Costs for Chemical Plants. W. E. Burpee, Stone and Webster Engineering Corp.

CP.** Electric Variable Speed Drives in the Chemical Industry. J. W. Picking, Reliance Electric and Engineering Corp.

CP.** Electrical Problems Relating to Relaying and Protection in Chemical Process Plants. W. C. Woods and L. V. Edison, Westinghouse Electric Corp.

CP.** Amplistat Current Regulator for Rectifiers on Chlorine Service. J. P. Smith, General Electric Co.

10:00 a.m.—Rotating Machinery

CP.** Elementary Principles of Matrix Algebra. M. B. Reed, University of Illinois.

CP.** General Network Theory in Terms of Matrix Algebra. M. B. Reed, University of Illinois.

54-87. Application of Network Theory to the Analysis of Rotating Machinery. Part I—Synchronous and Asynchronous Machines. H. E. Koenig, University of Illinois.

54-88. Application of Network Theory to the Analysis of Rotating Machinery. Part II—Commutating Machines. H. E. Koenig, University of Illinois.

10:00 a.m.—Dielectrics and Insulation Temperature Standards

54-69. Impulse Ionization and Breakdown in Liquid Dielectrics. G. M. L. Sommerman, Battele Memorial Institute; C. J. Bute, Bonneville Power Authority, and E. L. C. Larson, Otter Tail Power Co. Re-presented for discussion.

54-70. Effect of Electrical Discharges on the Breakdown of Solid Insulation. T. W. Dakin, H. M. Philofsky and W. C. Divens, Westinghouse Electric Corp. Re-presented for discussion.

CP.** General Problems Relating to the Classification of Insulating Materials. H. F. Miller, General Electric Co.

CP.** Principles for Temperature Classification of Insulating Materials by Functional Test. K. N. Mathes, General Electric Co.

CP.** International Activities on Thermal Evaluation of Insulation Materials. L. J. Berberich, Westinghouse Electric Corp.

10.00 a.m.—Medicine and Biology

CP.** A Sealed Off Betatron Donut for Electron Beam Extraction. T. H. Rogers, Machlett Labs., Inc. and D. T. Scag, Allis-Chalmers Mfg. Co.

CP.** Instrumentation for Electrical Impedance Plethysmography. Matthew Conrad, Philadelphia, Pa.

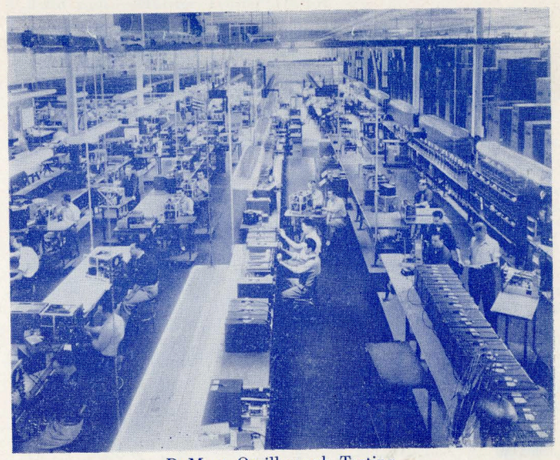
CP.** An Electrical Analog for Biological Systems. J. Berman and R. Schoenfeld, Sloan-Kettering Institute.

CP.** X-Ray Equipment for Radiobiology. E. D. Trout, J. P. Kelley and A. C. Lucas, General Electric Co.

10:00 a.m.—Management

CP.** The Development of Managers. Richard DeMott, SKF Roller Bearing Co.

CP.** New Horizons for Engineers. Harold Smiddy, General Electric Co.



DuMont Oscillograph Testing

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10.00 a.m.—Electronic Control

CP.** Some Practical Applications of Photoelectric Inspection to Industrial Control. R. C. Booth, Electric Eye Equipment Co.

CP.** A Electronic Power Supply for Integral Horsepower Motors. J. H. Gregson and E. G. Cowie, Canadian Westinghouse Company, Ltd.

CP.** Performance Specifications Are Needed for Electronic Control. B. Cooper, General Electric Co.

CP.** Performance Specifications for Regulated Drives. F. Slamar and E. H. Vedder, Westinghouse Electric Corp.

2:00 p.m.—General Session

Tuesday, January 19

9:30 a.m.—Rotating Machinery and Joint Subcommittee on Carbon Brushes.

54-89. Practical Aspects of Brush Contact Stability. W. B. Belt, Morganite, Inc.

54-90. The Use of Microwaves in Observing Commutator and Slip Ring Surfaces During Operation. A. H. Ryan and S. D. Summers, Naval Research Lab.

54-91. Electrical Resistance of Carbon Brushes on Copper Rings. E. I. Shobert II, Stackpole Carbon Co.

CP.** Quantitative Analysis of Carbon Brush Treatments Using X-Ray Photometer Absorption Method. A. C. Titus, General Electric Co.

CP.** Air Humidity and Brush Contact Drop. H. M. Elsey, Westinghouse Electric Corp.

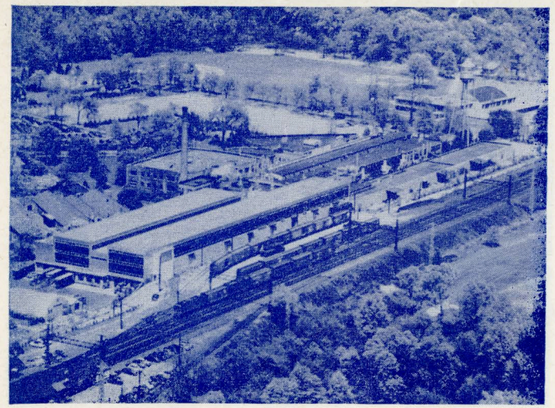
9:30 a.m.—Power Generation

54-151. The Hungry Horse Project Power Development. F. M. Wilson, U. S. Bureau of Reclamation.

54-152. Supervisory Control and Remote Control Help TVA Cut Operating Costs. R. M. Alspaugh and A. P. Maness, Tennessee Valley Authority.

54-57. The OVEC Project. Philip Sporn and V. M. Marquis, American Gas & Electric Service Corp.

54-153. Tests and Operating Experiences at the Ottawa River Plants for the Hydro-Electric Power Commission of Ontario. J. J. Traill, F. C. Lawson, H. C. Ross and G. B. Tebo, The Hydro-Electric Power Commission of Ontario. Re-presented for discussion.



The Electrolux Corporation

9:30 a.m.—Transmission Systems

54-5. A Simplified Approach to Steady State Stability Limits. W. G. Heffron, Jr., General Electric Co.

54-14 Analyzer Interconnections for Direct Determination of Power System Swing Curves. G. A. Bekey and F. W. Schott, Universtiy of California.

54-143. Digital Load Flow Studies. L. A. Dunstan, Beaverton, Oregon.

CP.** Evaluation of the Integration Method for Analysis of Non-Standard Surge Voltages. A. R. Jones, Westinghouse Electric Corp.

CP.** Electrical Clearances for Transmission Line Design at the Higher Voltages. P. L. Bellaschi, Consulting Engineer.

9:30 a.m.—Factors Affecting Permissible Leakage Currents in Portable Electrical Equipment.

CP.** The Threshold of Perception Currents. C. F. Dalziel, University of California.

CP.** The Viewpoint of the Electrical Manufacturer. W. P. Von Behren, General Electric Co.

CP.** The Viewpoint of the Electric Utility. H. A. Brown, Rochester Gas & Electric Co.

CP.** The Viewpoint of the Electrical Equipment Merchandiser. O. D. Johnson, Sears, Roebuck & Co.

9:30 a.m.—Thermal Evaluation of Magnet Wire Insulation.

CP.** Thermal Life of Magnet Wire Insulation. Ralph Hall, Phelps Dodge Copper Products Corp.

CP.** Determination of Thermal Life of Enameled Wire by Laboratory Test Methods. F. A. Sattler, Westinghouse Electric Corp.

CP.** A Method of Evaluating Thermal Stability of Magnet Wire Enamel. C. G. Currin and J. F. Dexter, Dow Corning Corp.

CP.** Functional Evaluation of Enameled Wire-Varnish Combinations. H. I. Morgan and K. N. Mathes, General Electric Corp.

CP.** Effects of Accelerated Aging on the Dielectric Strength and Power Factor of Magnet Wire Measured at the Aging Temperature. H. L. Saums and W. W. Pendleton, Anaconda Wire & Cable Co.

9:30 a.m.—Relays

54-113. Loss-of-Field Protection for Synchronous Machines. R. L. Tremaine and J. L. Blackburn, Westinghouse Electric Corp.

54-112. An Improved Transformer Differential Relay. C. A. Mathews, General Electric Co.

54-145. More About Setting Industrial Relays. F. P. Brightman, General Electric Co.

CP.** Single Pole Reclosing on Shawinigan Water and Power Co. 230 KV Transmission Lines. R. B. Reed and B. C. Hicks, Shawinigan Water and Power Co.

9:30 a.m.—Electronic Power Converters

54-43. Rectifier Arc-Back Study on the Analogue Computer. J. K. Dillard and C. J. Baldwin, Jr., Westinghouse Electric Corp.

CP..** Pumpless Ignitrons—Field Experience and New Developments. R. J. Moran and E. J. Remscheid, General Electric Co.

CP.** Methods of Measuring Arc-Drop Voltage on Mercury Arc Rectifiers. H. Winograd, Allis-Chalmers Mfg. Co. and W. E. Lawton, Aluminum Co. of America.

9:30 a.m.—Behavior of the Elusive Lumen

CP.** Economics of Lamp Operation and Replacement Under Normal and Abnormal Conditions. E. A. Linsday, General Electric Co.

CP.** Industrial Luminaires Designed for Cleaner, Better Operation. Eric Church, Benjamin Electric Mfg. Co.

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CP.** Commercial Luminaires Designed for Longer Life, Easier Maintenance. Dana Rowten, Westinghouse Electric Corp.

Discussion Forum on How the Elusive Lumen Gets Away.

9:30 a.m.—Telegraph Systems

CP.** Signal Corps Engineering Laboratory Facsimile Activities. W. H. Junkelman, Coles Signal Lab.

CP.** A New Continuous-Feed Facsimile Scanner. J. V. L. Hogan and G. M. Stamps, Hogan Labs., Inc.

CP.** Problems in Facsimile Scanning with Cathode-Ray Tubes. W. H. Bliss, RCA Labs.

CP.** Design Factors in Continuous Facsimile Recorders. P. L. Grafstein and A. G. Cooley, Times Facsimile Corp.

9:30 a.m.—Instruments and Measurements

54-170. Thermocouple Type Ammeters for Use at Very High Frequencies. O. G. McAninch, General Electric Co.

54-16. A Tungsten Resistance Thermometer. F. R. Sias, J. R. Macintyre and A. Hansen, General Electric Co.

54-171. Basic Theory and Experimental Verification of the Alternating-Current Galvanometer. T. J. Higgins, University of Wisconsin and William Kneen, Pullman Standard Car Mfg. Co.

CP.** A Comparison Standard for Electrical Energy Measurement. A. W. Spinks and T. L. Zapf, National Bureau of Standards.

2:00 p.m.—Sections Committee

2:00 p.m.—Synchronous Machinery

54-49. Direct Cooling of Turbine Generator Field Windings. C. H. Holley and H. D. Taylor, General Electric Co.

54-48. A New Fully Supercharged Generator. S. Beckwith and L. T. Rosenberg, Allis-Chalmers Mfg. Co.

54-92. Additional Design Features of the Fully Supercharged Generator. B. M. Koetting and G. W. Staats, Allis-Chalmers Mfg. Co.

54-50. Ventilation of Inner-Cooled Generators. R. A. Baudry and P. R. Heller, Westinghouse Electric Corp.

CP.** Test Results of an Inner Cooled Generator. W. C. Brenner and P. R. Heller, Westinghouse Electric Corp.

2:00 p.m.—Power Generation

54-154. Controls for Operation of Steam Turbine-Generator Units. O. N. Bryant, C. C. Sterrett and D. M. Sauter, Westinghouse Electric Corp.

54-155. Turbine and Boiler Protection and Interlocking on the A.G.&E. Company System. H. C. Barnes and C. P. Lugrin, American Gas & Electric Service Corp.

54-40. Turbine Generator Controls, Protections and Accessories. G. W. Cunningham and M. A. Eggenberger, General Electric Co.

54-37. Methods of Starting Gas Turbine-Generator Units. W. B. Boyum, R. W. Ferguson and J. G. Partlow, Westnghouse Electric Corp.

2:00 p.m.—Wood and Steel Transmission Lines

54-35. 230 KV Wood Pole Transmission Line Design. J. J. Trainor, Public Service Co. of Indiana and L. B. LeVesconte, Sargent & Lundy.

54-21. Foundation Stability of Wood Pole H-Frame Structures for Transmission Lines. R. W. Caswell and F. E. Andrews, Commonwealth Edison Co.

CP.** Problems Associated with Maintenance of Steel Transmission Towers. L. K. Yerger, Niagara Mohawk Power Corp.

CP.** Light versus Heavy Transmission Steel Towers. F. B. Di Castelbianco, Milan, Italy.

CP.** Effects of Tornadoes on Steel and Wood Lines. C. A. Booker, New England Power Service Co.

CP.** Use of Aluminum Alloys for Transmission Line Structures. G. H. Phillips and J. E. Williams, Aluminum Co. of America.

CP.** Construction Costs, Design Factors and Operating Experience on Long Span 'H" Frame Transmission Lines. C. H. Schofer, Penna. Power & Light Co.

2:00 p.m.—Electrical Regulators for Industrial Machines. Characteristics and Economic Fields of Applications.

CP.** Electronic Regulators. E. J. Luoma, Reliance Electric and Engineering Co.

CP.** Rotating Regulators. G. E. Shaad, General Electric Co.

CP.** Magnetic Amplifier Regulators. R. W. Moore, Westinghouse Electric Corp.

2:00 p.m.—Thermal Evaluation of Magnet Wire and Flexible Sheet Insulation

54-71. Significant Measurements for Determining the Stability of High Temperature Magnet Wire Insulation. A. L. Scheideler, General Electric Co.

54-72. Calculation of Life Characteristics of Insulation. L. C. Whitman and Paul Doigan, General Electric Co.

CP.** Significance of Thermal Aging Tests on Varnish Impregnated Sheet Insulation. T. W. Dakin, H. J. Philofsky and W. C. Divens, Westinghouse Electric Corp.

CP.** Aging Tests of Class H Layer Insulations. J. S. Parkinson, Johns-Manville Corp.

CP.** Thermal Aging Tests on Silicone Rubber and Class B and H Mica Insulation. E. J. Croop, Westinghouse Electric Corp.

2:00 p.m.—Comparison of Analogue Computers

CP.** Theory and Application of High-Speed Electronic Models. D. H. Sheingold, GAP/R.

CP.** An Improved Electronic Function Generator. H. C. Vivian, Boeing Airplane Co.

CP.** Servo Phase Measurements at Low Frequencies. M. A. Miller and H. Hamer, Electronic Associates, Inc.

CP.** Use of Flight Simulators in the Design of Aircraft Control Systems. H. E. Blanton, Massachusetts Institute of Technology.

2:00 p.m.—Marine Transportation

CP.** Nuclear Power Plants for Ship Propulsion—Description. F. E. Crever and K. Trocki, General Electric Co.

CP.** Nuclear Power Plants for Ship Propulsion—Application. R. L. Witzke and S. A. Haverstick, Westinghouse Electric Corp.

CP.** Forty Years of Electrical Engineering Progress in Tankers. L. M. Goldsmith, Atlantic Refining Co.

54-144. Series versus Parallel Connected Generators for Multiple Engine, Direct Current, Diesel Electric Ship Propulsion Systems. J. A. Wasmund, Westinghouse Electric Corp.

2:00 p.m.—Controlling the Elusive Luman

CP.** Mass-production Methods Applied to Lamp Replacements and Fixture Cleaning. Fred Vorlander, Vorlander Lighting.

CP.** The Practical, Profitable Maintenance Program at Sperry. James Kimball, Sperry Gyroscope Co.

CP.** John Hancock Insurance Company's Program to Insure Good Lighting at Low Cost. T. C. Sargent, Sylvania Electric Products, Inc.

CP.** Making a Business of Lighting Maintenance. A. Marmon, Broadway Maintenance Co.

Discussion Forum on How Simplified Maintenance Keeps the Elusive Lumen at Work.

2:00 p.m.—Telegraph Systems

54-105. A New Portable Telegraph Transmission Measuring Set. S. I. Cory, Bell Telephone Labs., Inc.

CP.** RCA's International Teleprinter Exchange System. R. E. Hammond, RCA Communications, Inc.

54-114. High Speed Teletypewriter Equipment for the Armed Services. C. E. Schultheiss, Klienschmidt Labs., Inc.

54-115. A Step Forward in Printing Telegraphy. A. S. Benjamin and W. J. Zenner, Teletype Corp.

2:00 p.m.—Instruments and Measurements

54-172. A Signal Generator Using A Short Circuit Rotor. V. A. Orlando, General Electric Co.

CP.** A Flexible, Wide-Range Potentiometer for the Instrument Laboratory. H. B. Brooks, Consulting Engineer; F. K. Harris and F. K. Schroyer, National Bureau of Standards.

CP.** A Camera Obscura for Instrument Reading. F. K. Harris and F. D. Weaver, National Bureau of Standards.

CP.** Stabilized Power Supplies for Instrument Applications. W. G. Amy, F. H. Krantz, and A. J. Williams, Jr., Leeds & Northrup Co.

54-173. Sheet and Plated-Metal Measurements with a Phase-Angle-Type Probe. W. A. Yates and J. L. Queen, National Bureau of Standards. Re-presented for discussion.

Wednesday, January 20

9:30 a.m.—Heat Pumps

CP.** Load Characteristics of Twenty-nine Domestic Electric Space Heating Installations in the Detroit Area. A. E. Bush and R. P. Woodward, Detroit Edison Co.

CP.** Performance of Earth Reservoir Heat Pumps. Merl Baker, The Kentucky Research Foundation.

CP.** Advancements in the Weathertron Program. P. F. O'Neill, General Electric Co.

CP.** The Residential Heat Pump. J. L. Ditzler and F. R. Benedict, Westinghouse Electric Corp.

CP.** Discussion on Residential Heat Pump Development. C. D. Graham, General Motors Corp.

9:30 a.m.—Synchronous Machinery

54-93. Magnetic Vibrations in Alternating-Current Generator Stators. R. A. Baudry, P. R. Heller and L. P. Curtis, Westinghouse Electric Corp.

CP.** The Enclosing Structure of Hydrogen-Cooled Electrical Machines. M. D. Ross, J. J. Hart, R. V. Roberts and R. A. Baudry, Westinghouse Electric Corp.

CP.** Turbine Generator Stator Winding Temperatures at Various Hydrogen Pressures. J. R. M. Alger, C. E. Kilbourne and D. S. Snell, General Electric Co.

54-94. Temperature Drop to Resistance Temperature Detector in Stator Windings of Turbine Generators. J. P. Jerrard, General Electric Co.

54-42. New Developments in Armature Winding Arrangements for Large Turbine Generators. D. Harrington, General Electric Co. and J. E. McElligott, Palmer Electric Mfg. Co.

9:30 a.m.—Switchgear

54-31. A New Hydraulic Mechanism for Power Circuit Breakers. E. R. Perry and N. W. Morelli, Allis-Chalmers Mfg. Co.

54-130. An Advance in Pneumatic Mechanisms for High Voltage Power Circuit Breakers. R. C. Van Sickle and R. N. Yeckley, Westinghouse Electric Corp.

54-131. A Compressed Air Circuit Breaker for Continuous Currents in Excess of 5000 Amperes. H. H. Rugg and J. E. Schrameck, Westinghouse Electric Corp.

54-132. A New 115-Kv Stored-Energy Type Capacitor Switch. D. C. Prince, General Electric Co.; P. Wildi, W. H. Clagett and J. Gregg, Pacific Oerlikon Co.

54-133. Guide for Application and Operation of Outdoor Metal Clad Switchgear. Subcommittee on Switchgear Assemblies.

9:30 a.m.—Insulated Conductors

54-73. Pipe Type Cable Installation Techniques. R. W. Gillette, Consolidated Edison Co. of N. Y., Inc. and F. M. Hull, Detroit Edison Co.

54-56. 120 KV Self-Contained Compression Cable Installation at Montreal. S. H. Cunha, M. P. Gunning and D. M. Farnham Quebec Hydro Electric Commission.

54-74. 115 KV Pipe-Type Compression Cable Installation at Toronto, Canada. G. E. Kewin, J. M. Blades, Hydro-Electric Power Commission of Ontario, and G. B. Russel, Enfield Cables, Ltd.

CP.** High Pressure Self Contained Gas Filled Cable Installation. G. B. Shanklin, General Electric Co.

9:30 a.m.—A Report on Industrial Power Systems Grounding

CP.** Part I. System Neutral Grounding. H. B. Thacker, Westinghouse Electric Corp.

CP.** Part II. Equipment Grounding. H. H. Angel, Bethlehem Steel Corp.

CP.** Part III. Static Grounding and Grounding for Lightning Protection. C. C. Saunders, E. I. du Pont de Nemours & Co.

CP.** Part IV. Earthing. M. A. Leland, Chairman, Working Group.

9:30 a.m.—Electrostatic Processes

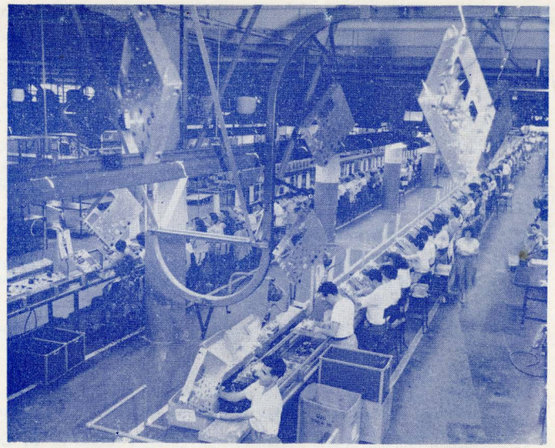
54-174. Recent Developments in the Theory and Design of Electric Spark Machine Tools. E. M. Williams, J. B. Woodford, Jr. and R. E. Smith, Carnegie Institute of Technology.

CP.** Industrial Electrostatic Processes for Particulate Matter. O. C. Ralston, Bureau of Mines.

CP.** Corona Currents in Electrostatic Precipitation. G. W. Penney and E. A. Sack, Carnegie Institute of Technology.

CP.** Development of Power Supplies for Electrostatic Air Cleaners, A. C. Fields, Westinghouse Electric Corp.

54-175. An Automatic Voltage Control System for Electrical Precipitators. H. J. Hall, Research Corp.



CBS-Columbia Television Assembly

9:30 a.m.—Conference on Noise

CP.** Sources and Properties of Electrical Noise. W. R. Bennett, Bell Telephone Labs., Inc.

CP.** Signal Detection in Noise. G. W. Preston, Philco Corp.

CP.** The Measurement of Noise Spectra. J. W. Tukey, Bell Telephone Labs., Inc.

54-162. The Use of Instantaneous Point Sources or Green's Functions in Evaluating Electromagnetic Fields. J. J. Smith, General Electric Co.

9:30 a.m.—New Developments in Analog Computers.

CP.** Transistor Building Blocks for Analogue Computers. H. Hellerman, Syracuse University.

CP.** A Static Ferromagnetic Memory with Microsecond Access. I. L. Auerbach, L. G. Thompson and J. Wylen, Burroughs Adding Machine Co.

54-168. Digital Computers as an Aid in Electrical Machine Design. R. M. Saunders, University of California.

54-169. Bibliography on Data Storage and Recording. G. L. Hollander, Massachusetts Institute of Technology.

CP.** Design Features of Two Large Scale Analog Computers on the West Coast. Stanley Rogers and Dov Abramis, Consolidated Vultee Aircraft Co.

9:30 a.m.—Land Transportation

54-116. Some Application Phases of the Ignitron Rectifier Locomotives on the Pennsylvania Railroad. F. D. Brown, Westinghouse Electric Corp.

54-110. Rectifier Motive Power—Inductive Coordination Considerations. E. B. King, American Telephone & Telegraph Co.; K. H. Gordon, The Pennsylvania Railroad and L. J. Hibbard, Westinghouse Electric Corp.

CP.** New Ignitron Multiple-Unit Car Equipment for the New Haven Railroad. E. W. Ames, W. M. Hutchison and V. A. Moore, Westinghouse Electric Corp.

54-29. A Re-Appraisal of the Economics of Railway Electrification. How, When and Where Can It Compete with the Diesel-Electric Locomotive? H. F. Brown and R. L. Kimball, Gibbs & Hill, Inc.

9:30 a.m.—Wire Communication Systems

54-101. Line Amplifiers for Community Television Systems. K. A. Simons,, D. Kirk and H. J. Arbeiter, Jerrold Electronics Corp.

54-58. Application and Transmission Features of a New Twelve-Channel Open-Wire Carrier System. K. E. Appert, R. S. Caruthers and W. S. Chaskin, Lenkurt Electric Co., Inc.

54-102. Mechanical Aspects and Component Features of a New Twelve-Channel Open-Wire Carrier System. A. G. Ewing, F. W. Frazee and Dale Welling, Lenkurt Electric Co., Inc.

CP.** A Pole-Mounted Repeater for a Twelve-Channel Open-Wire Carrier System. George Searle, Wisconsin Bell Telephone Co.

9:30 a.m.—Electrochemical Processes

54-176. A New High Current Switch for Electrochemical and Electrothermal Applications. H. W. Graybill, Railway and Industrial Engineering Co. Re-presented for discussion.

54-178. Magnetic Amplifiers for Metering DC Current on Electrolytic Cell Lines. E. A. Downing, Columbia Southern Chemical Corp. Re-presented for discussion.

CP.** Operating Experience with a Mechanical Rectifier. J. Chamulak. J. W. Tracht, Pennsylvania Salt Mfg. Co.; W. C. McCullough, I-T-E Circuit Breaker Co.

Panel Discussion—Layout of Modern Rectifier Substations for Electrolytic Plants.

9:30 a.m.—Mining and Metal Industry

CP.** Application of Motors and Control to Crushers. H. A. Wright and T. Bellinger, Allis-Chalmers Mfg. Co.

CP.** Application of Motors and Control on Ball Mills and Rod Mills. W. H. Schwedes, General Eectric Co.

CP.** Part Winding Starting of Large Motors. E. A. E. Rich, General Electric Co.

CP.** Factors Affecting Choice of Mine Hoist Drive. R. B. Moore, General Electric Co.

2:00 p.m.—Research

CP.** Principles of Operations Research. J. B. Lathrop, Arthur D. Little, Inc.

CP.** An Application of Operations Research in the Power Field. E. W. Boehne, Massachusetts Institute of Technology.

CP.** Active Research in the Development of Atomic Fuels for the Generation of Electric Power. W. L. Cisler, Detroit Edison Co. and A. P. Donnell, The Dow Chemical-Detroit Edison Nuclear Power Project.

CP.** Research for and by the Electric Power Industry. J. E. Hobson, Stanford Research Institute and W. A. Lewis, Illinois Institute of Technology.

CP.** No Research Means No Students. E. A. Walker, The Pennsylvania State College.

2:00 p.m.—Rotating Machinery

54-20. Induction Motor Theory—Some Elementary Concepts Extending to Supra-Synchronous Speeds. C. T. Button, National Pneumatic Co., Inc.

54-17. Physical Concepts of Stray Load Loss in Induction Machines. S. S. L. Chang, New York University.

54-22. Torque-Energy Relations in Induction Machines. P. L. Alger and W. R. Oney, General Electric Co.

54-26. Induction Generator Theory and Application. J. E. Barkle and R. W. Ferguson, Westinghouse Electric Corp.

54-28. Accuracy and Simplicity in Induction Motor Calculations. J. F. H. Douglas, Marquette University. Re-presented for discussion.

2:00 p.m.—Switchgear

54-134. A New Basis for Rating Power Circuit Breakers. Working Group on Methods of Rating Power Circuit Breakers of the Subcommittee on Power Circuit Breakers.

54-32. A 10,000 MVA 138 KV Outdoor Oil Circuit Breaker. A. W. Hill and G. B. Cushing, Westinghouse Electric Corp.

54-135. 138 KV Line Dropping Field Tests. D. L. Finneran, R. D. Allen, Commonwealth Associates, Inc.; L. J. Linde and A. E. Kilgour, Allis-Chalmers Mfg. Co.

2:00 p.m.—Insulated Conductors

54-11. Single Phase Impedance to Ground in Pipe-Type Cable. E. R. Thomas, Consolidated Edison Co. of N. Y., Inc.

54-75. Control of the Thermal Environment of Buried Cable Systems. L. H. Fink, Philadelphia Electric Co.

54-76. Ratings of Pipe-Cable Systems During Steady-State and Transient Cyclical Loading. M. Morris and R. W. Burrell, Consolidated Edison Co. of N. Y., Inc.

54-77 Corrosion Control of Underground Power Cable in New York. F. E. Kulman, Consolidated Edison Co. of N. Y., Inc.

2:00 p.m.—Industrial Power Systems

54-9. Coordinated Fuse Protection for Low-Voltage Disribution Systems in Industrial Plants. J. C. Lebens, Bussmann Mfg. Co.

54-36. Iron Conduit Impedance Effects in Ground Circuit Systems. A. J. Bisson and E. A. Rochau, Consolidated Edison Co. of N. Y., Inc.

CP.** Higher Voltage Power Distribution Systems for Large Office Buildings. H. D. Kurt and D. L. Beeman, General Electric Co.

AIEE WINTER GENERAL MEETING

2:00 p.m.—Conductor Device

CP.** A Silicon Junction Diode Sealed in Glass. S. H. Barnes, Hughes Research Lab.

CP.** Silicon High Level P-N Junction Devices. Vernon Ozarow, General Electric Co.

CP.** A Two Emitter Transistor with a High Adjustable Alpha. R. F. Rutz, International Business Machines.

CP.** The Surface—Barrier Transistor. W. H. Forster, Philco Corp.

CP.** Junction Transistors as Controlled Switches. R. L. Bright and G. H. Royer, Westinghouse Electric Corp.

CP.** Noise Characteristics of P-N Junction Diodes. D. P. Kennedy, Raytheon Mfg. Co.

CP.** Frequency Response of Grounded-Base and Grounded-Emitter Junction Transistors. R. L. Pritchard, General Electric Co.

2:00 p.m.—Feedback Control Systems

CP.** An Extension of Frequency Domain Methods to Non-Linear Systems, Including Servomechanisms. Howard Hamer, Electronic Associates, Inc.

CP.** The Use of Thyratrons in Position Control Servomechanisms. J. C. West and D. K. Partington, The University, Electrical Engineering Labs.

CP.** Electrical Components of the Gyrotron Vibratory Rate Gyro. J. B. Chatterton, Sperry Gyroscope Co.

54-123. Contactor Servomechanisms Employing Sampled-Data. C. K. Chow. Pennsylvania State College.

2:00 p.m.—Metallic Rectifiers

54-163. Electrical Properties of Microcrystalline Selenium. Gilbert Halverson, Fansteel Metallurgical Corp.

54-164. Instantaneous Electrical Characteristics of Selenium Rectifiers. G. F. Pittman, Jr., Westinghouse Electric Corp.

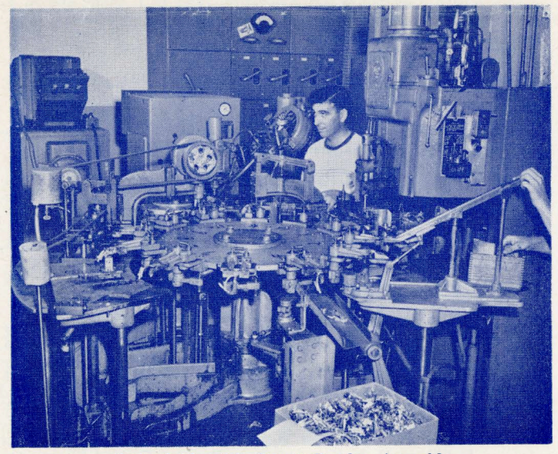
CP.** Applications of Germanium Power Rectifiers. E. A. Harty, General Electric Co.

CP.** Evaluating Rectifiers for Magnetic Amplifiers. D. J. Sikorra, Minneapolis-Honeywell Regulator Co.

2:00 p.m.—Land Transportation

54-45. Fundamentals of Flashing of Diesel-Electric Motors and Generators. C. A. Atwell, Westinghouse Electric Corp.

CP.** Flashovers of Diesel Traction Motors and Main Generators. J. R. Schoonover, Lehigh Valley R.R.



Federal Electric's Circuit Breaker Assembly

CP.** D. C. Machine Flashover Behavior. O. C. Coho, Jr., General Electric Co.

CP.** Summary of Report on Diesel-Locomotive Flashovers. W. B. Miller, Chicago & North Western Ry.

CP.** Static Excitation Control for Diesel-Electric Locomotives. S. W. McElhenny and R. M. Smith, General Electric Co.

2:00 p.m.—Wire Communications

54-103. Some Engineering Considerations in the Design of Telephone Systems to Serve Predominantly Rural Areas. T. J. McDonough and W. T. Smith, U. S. Dept. of Agriculture.

CP.** Telephone Lines for Rural Subscribers Service. L. Hochgraf and R. G. Watling, Bell Telephone Labs., Inc.

CP.** Polyethylene Insulated Telephone Cable—Quadded Construction. E. R. Kerwin and F. J. Gorman, Ansonia Wire and Cable Co.

54-104. Polyethylene Insulated Telephone Cable. A. S. Windeler, Bell Telephone Labs., Inc.

2:00 p.m.—Petroleum Industry

CP.** Selection and Application of Large Motors for Petroleum Refineries. C. M. Lathrop and E. J. Winsor, Standard Oil Development Co.

CP.** Design of a 3000 HP Explosion Proof Motor. A. R. Gilmour, Westinghouse Electric Corp.

CP.** Supervisory Control for Pipeline Pumping Stations. M. A. Hyde and W. A. Derr, Westinghouse Electric Corp.

2:00 p.m.—Mining and Metal Industry

CP.** Remotely Controlled Bore Mining and Its Electrical Considerations. R. R. Cosner, Carbide & Carbon Chemicals Corp.

CP.** Electric Equipment for Rotary Blast Hole Drills. G. F. Johnson, Joy Mfg. Co.

CP.** Electric Power Distribution and Utilization Problems at Georgetown Open Cut Coal Mine. E. E. Gaston, Hanna Coal Co.

CP.** Distribution and Utilization of Electric Power in Underground Mines. Mr. Rector, Westinghouse Electric Corp.

Thursday, January 21

9:30 a.m.—Mining and Metal Industry

CP.** Characteristics and Design of Regulating Systems for 7000 FPM Tandem Cold Strip Mill. R. G. Beadle and R. E. Manko, General Electric Co.

CP.** Characteristics and Design of the Temper Mill Drive. A. C. Halter and T. B. Montgomery, Allis-Chalmers Mfg. Co.

CP.** The A-C Power System at Fairless Mills. L. L. Fountain, W. A. Derr, Westinghouse Electric Corp. and S. Watkins, Gibbs & Hill, Inc.

CP.** Mercury Arc Rectifiers for 250 Volt D.C. Power Supply at Fairless Works. D. B. Scott and Paul Triplett, Allis-Chalmers Mfg. Co.

9:30 a.m.—Rotating Machinery

54-3. Dynamic Braking of Squirrel Cage Induction Motors. C. F. Evert, Jr., University of Cincinnati.

54-95. A Method of Determining Induction Motor Speed-Torque-Current Curves from Reduced Voltage Tests. R. F. Horrell and W. E. Wood, Electric Machinery Mfg. Co.

54-27. Operation of Three Phase Induction Motors on Unbalanced Voltages. J. E. Williams, University of Illinois.

54-96. Eddy-Current Losses in Induction Motor End-Turn Clamping Rings. John Baird, General Electric Co.

TECHNICAL PROGRAM

9:30 a.m.—Switchgear

54-30. A New Milestone in Circuit Breaker Interrupting Capacity 25 Million KVA at 330 KV. W. M. Leeds and G. J. Easley, Westinghouse Electric Corp.

54-59. A 330 KV-15,000 MVA Steel Clad Impulse Breaker to Guard the Nation's First 330 KV Lines. C. J. Balentine and E. B. Rietz, General Electric Co.

54-34. A 330 KV Air Switch. I. W. Gross, American Gas & Electric Service Corp.; S. C. Killian, H. K. Porter Co., Inc. and J. M. Sheadel, Ohio Brass Co.

54-33. Dielectric and Other Problems in the Design of a New 330 KV Outdoor Air Switch. A. H. Powell, General Electric Co.

CP.** A 330 KV Disconnecting Switch. J. B. Owens, Westinghouse Electric Corp.

9:30 a.m.—System Engineering and Power Generation.

54-25. Tie-Line Power and Frequency Control of Power Systems-II. C. Concordia and L. K. Kirchmayer, General Electric Co.

54-60. Effect of Cyclic Loads on an Interconnected System. C. K. Duff, Hydro-Electric Power Commission of Ontario.

54-61. Load-Phase Control—Method of Automatic Frequency Control of a Multiple Generating Plants System. Francois Cahen, Electricite De France.

54-62. Performance Tests of High-Speed Load and Frequency Control Equipment. C. P. Almon, Jr., and J. Donelson, Jr., Tennessee Valley Authority.

9:30 a.m.—Tubes for Ultra-High Frequency Television

CP.** High-Power UHF Klystron Design and Application. A. E. Rankin, General Electric Co.

CP.** Design Considerations for Television Tuners Using Pencil Tubes. W. H. Harris and J. J. Thompson, Radio Corp. of America.

CP.** UHF Amplifier Design for a Disc Seal Triode. S. C. Peek, Sylvania Electric Products, Inc.

CP.** Tube Evaluation at UHF. R. L. Bailey, General Electric Co.

9:30 a.m.—Magnetic Materials

CP.** Magnetic Developments in Japan. R. M. Bozorth, Bell Telephone Labs., Inc.

CP.** The Relation Between Domain Phenomena and Crystal Orientation to Design and the Use of Magnetic Materials. L. J. Dijkstra, Westinghouse Electric Corp.

CP.** Domain Structure in Relation to Magnetostriction and Design Factors. P. W. Neurath, General Electric Co.

9:30 a.m.—Electronic Circuit Theory Conference

CP.** Responses of Certain Basic Circuits to a Sinusoidal Wave Packet. T. J. Higgins, University of Wisconsin.

CP.** A New Method for Realizing a Driving Point Impedance Function. R. H. Pantell, Stanford University.

CP.** A Supplement to the Brune Synthesis Procedure. F. Reza, Massachusetts Institute of Technology.

CP.** Synthesis for Structure only of a Ladder Network when the Lattice is known, and is Reactive. G. B. Hoadley, University of North Carolina.

9:30 a.m.—Color Television Networking and Measurements

CP.** Differential Gain and Phase Measurements in Color Television Systems. H. Kelly, Bell Telephone Labs., Inc.

CP.** Photo-Electric Colorimeter for Color Television. J. B. Chatten, Philco Corp.

CP.** Phase Analyzer for Color Television. J. F. Fisher, Philco Corp.

CP.** Transmission of Color Over Intercity Television Networks. J. A. Rae, American Telephone & Telegraph Co.

9:30 a.m.—Communication Switching Systems

54-122. A Fully Automatic Teletypewriter Switching Center for Military Use. Leith Johnston and R. C. Stiles, Automatic Electric Co.

54-24. The Recognition and Identification of Symmetric Switching Functions. S. H. Caldwell, Massachusetts Institute of Technology.

CP.** Switching Functions on an N-Dimensional Cube. C. Y. Lee, Bell Telephone Labs., Inc.

CP.** Experience with Nationwide Dialing at Englewood, New Jersey. E. L. Getz, Bell Telephone Labs., Inc.

9:30 a.m.—Cathodic Protection and Storage Batteries

CP.** Electrical Grounding and Cathodic Protection at the Fairless Works. W. E. Coleman and Harold Frostich, U. S. Steel Corp.

54-180. Some Aspects of the Charge and Discharge Processes in Lead-Acid Storage Batteries. C. N. Craig and W. J. Hamer, National Bureau of Standards.

54-177. Some Discharge Characteristics of Lead Acid Batteries. E. A. Hoxie, The Electric Storage Battery Co.

9:30 a.m.—Extra High Voltage Transmission Systems

54-19. Protective Practices as a Criterion for High Voltage Transmission Design. H. L. Rorden and R. S. Gens, Bonneville Power Administration.

54-55. The American Gas and Electric Company 330 KV Transmission System Design Principles, Electrical Characteristics and Performance. H. P. St. Clair and C. A. Imburgia, American Gas & Electric Service Corp.

54-54. Equipment for American Gas and Electric 330 KV System. F. A. Lane, J. H. Kinghorn and F. M. Porter, American Gas & Electric Service Co.

CP.** Report on Insulation Coordination. J. H. Foote, Chairman, Standards Coordination Committee No. 8.

2:00 p.m.—Mining and Metal Industry

54-107. Considerations in Applying Rectifiers as a Power Supply for Hot Strip Mills. G. M. Zins and E. J. Cham, Westinghouse Electric Corp.

CP.** Transient Characteristics of Metal Rolling Motors and Generators. E. P. Smith, General Electric Co.

CP.** Ignitron Rectifier Voltage Regulators. L. F. Stringer, Westinghouse Electric Corp.

54-181. Electrical Equipment for Slabbing Mill and Blooming Mill. R. H. Wright and N. L. Kincaid, Westinghouse Electric Corp.

2:00 p.m.—Rotating Machinery

54-97. The Equivalent Circuit of the Schrage Motor. C. L. Sheng, Pennsylvania State College.

54-8. Speed-Torque Calculations for Induction Motors with Part Windings. P. L. Alger and C. H. T. Pan, General Electric Co.; Y. H. Ku, Moore School of Electrical Engineering.

54-15. Skin-Effect Bars of Squirrel-Cage Rotors. M. Liwschitz-Garik, Polytechnic Institute of Brooklyn.

54-23. Switching Transients in Wound Rotor Induction Motors. P. L. Alger, General Electric Co. and Y. H. Ku, Moore School of Electrical Engineering.

54-1. The Magnetic Noise of Polyphase Induction Motors. P. L. Alger, General Electric Co. Re-presented for discussion.

2:00 p.m.—System Engineering and Power Generation

CP.** Communication Systems of the Illinois-Missouri Electric Power Pool. G. W. Fox, Union Electric Co. of Missouri; D. F. Hazen, Illinois Power Co., and H. E. Stites, Central Illinois Public Service Co.

54-63. Load Control and Telemetering—Ohio Edison System. R. H. Travers, Ohio Edison Co.

CP.** Design and Operation of System-Wide Automatic Load Frequency Control Equipment. H. A. Bauman, C. N. Metcalf, J. G. Noest, Consolidated Edison Co., and G. B. Carolus, Leeds & Northrup Co.

CP.** Steam Plant Operation Improved by Load Frequency Control. H. C. Reasoner, Detroit Edison Co.

54-64. Principles of A. C. Power System Voltage Control for Operating Personnel. H. B. Smith, Niagara Mohawk Power Corp.

2:00 p.m.—Substations

54-83. 330 KV Outdoor Station for the Atomic Energy Commission. F. W. McCloska, Sargent & Lundy, and F. L. Musselman, General Electric Co.

54-84. Switching Surge Voltages in High Voltage Stations. I. B. Johnson and A. J. Schultz, General Electric Co.

54-80. A Guide for Minimum Electrical Clearances for Standard Basic Insulation Levels. Working Group on Minimum Clearances.

54-81. Application Guide on Methods of Substation Grounding. Working Group on Substation Grounding Practices.

54-82. A Guide to Safety Considerations in the Design of Substations. Working Group on Safety in Substations.

2:00 p.m.—Magnetic Materials

CP.** What is Ferrimagnetism? L. R. Maxwell, U. S. Naval Ordnance Lab.

CP.** Properties and Applications of Available Ferrites. V. E. Legg and C. D. Owens, Bell Telephone Labs., Inc.

CP.** A Comparison of Metals and Ferrites for High Frequency Applications. D. R. Brown, D. A. Buck and Norman Menyuk, Massachusetts Institute of Technology.

CP.** High Coercive Permanent Magnet Materials and Their Application. T. O. Paine and L. I. Mendelsohn, General Electric Co.

2:00 p.m.—Present Status of Transistors

CP.** Transistor Materials. F. J. Morin, Bell Telephone Labs., Inc.

CP.** Transistor Devices. W. C. Dunlap, Jr., General Electric Co.

CP.** Transistor Technology. R. L. Sherwood, RCA Labs.

CP.** Transistor Applications. R. F. Shea, General Electric Co.

2:00 p.m.—Color Television Transmitting Facilities

CP.** Color Television Camera Equipment. F. W. Millspaugh, Radio Corp. of America.

CP.** Equipment for Color Television Broadcasting. R. Popkin-Clurman, Telechrome Corp.

CP.** Color TV Studio Design from an Operational Standpoint. R. Montford, National Broadcasting Co.

CP.** Color Television Equipment for the Broadcaster. O. W. B. Reed, Jr., Jansky and Bailey, Inc.

2:00 p.m.—Insulated Conductors

54-10. Evaluation of Cable Movement due to Cyclic Loading. C. A. Bauer and R. J. Nease, Commonwealth Edison Co.

54-7. Tellurium Alloy Lead Sheath for Power Cable. G. B. Shanklin and J. F. Eckel, General Electric Co.

54-78 Crepe Papers and Crepe-Paper Cables. G. Camilli, L. Mulligan and E. L. Crandall, General Electric Co.

54-79. A Submarine Cable for 100 Kv D. C. Power Transmission. B. O. N. Hansson, Aktiebolaget Liljeholmens Kabelfabrik.

2:00 p.m.—Transmission and Distribution and Protective Devices

54-156. Measuring Equipment and Techniques Used for High-Voltage Impulse Tests on Lines and Substations. J. W. Skooglund and T. L. Dyer, Jr., Westinghouse Electric Corp.; W. H. Kolb, American Gas & Electric Service Corp.

54-51. High Voltage Impulse Tests on Transmission Lines. C. F. Wagner and B. L. Lloyd, Westinghouse Electric Corp. I. W. Gross, American Gas & Electric Service Corp.

54-157. High-Voltage Impulse Tests in Substations. I. W. Gross and W. S. Price, American Gas & Electric Service Corp.; S. B. Griscom and J. M. Clayton, Westinghouse Electric Corp.

54-53. Voltage Divider for Measuring Impulse Voltages on Transmission Lines. S. B. Griscom, B. L. Lloyd and A. R. Hileman, Westinghouse Electric Corp.

2:00 p.m.—Electronic Education

CP.** The Fundamentals of Electronics. I. B. Baccus, Michigan State College.

CP.** Electronics Education in the Small College. K. F. Sibila, University of Akron.

CP.** Electronics in the Five-year Undergraduate Program. E. M. Boone, Ohio State University.

CP.** The effects of Recent Scientific Developments Upon Education in Electronics. J. D. Ryder, University of Illinois.

CP.** Industry Examines Engineering Education. A. L. Samuel and R. W. Wolslegel, International Business Machines Corp.

Friday, January 22

9:30 a.m.—Mining and Metal Industry

CP.** Electrical Control for Continuous Annealing. P. A. Travisano, General Electric Co.

CP.** Unusual Electrical Drive Features Applied to Fairless Processing Lines. E. E. Vonada, Reliance Electric & Engineering Co.

54-108. Trends in "Automation"—Electrolytic Tinning. P. R. Gravenstreter and R. E. Layton, The Clark Controller Co.

CP.** 60 Cycle Induction Heating of Aluminum. J. W. Hrovath, Aluminum Co. of America.

Brookhaven Reactor Research Equipment

9:30 a.m.—Rotating Machinery

54-98. Effect of Overvoltages and Surges on Machine Insulation. C. L. Sidway and J. E. Conner, Southern California Edison Co.

54-18. Stator Insulation Practices for High-Voltage Inner-Cooled Generators. G. L. Moses, Westinghouse Electric Corp.

54-99. Corona in Low Voltage Motor Windings. W. T. Starr, General Electric Co.

CP.** Thermal Endurance of Silicone Magnet Wire Evaluated by Test. W. J. Bush and J. F. Dexter, Dow-Corning Corp.

CP.** Review of Some Problems in DC Testing Low Voltage Electric Machine Insulation. G. L. Moses, Westinghouse Electric Corp.

9:30 a.m.—Transformers

54-46. Parallel Windings in Multiwinding Transformers. Saul Bennon, Westinghouse Electric Corp.

54-117. Long Time Scale Models of Transformers for the Determination of Transient Voltages. P. A. Abetti, General Electric Co. and H. B. Belck, Rennselaer Polytechnic Institute.

54-13. Fundamental Oscillations of Coils and Windings. P. A. Abetti and F. J. Maginniss, General Electric Co.

54-118. Some Properties of the Optimum Power Transformer Design. H. L. Garbarino, Armour Research Foundation of Illinois Institute of Technology.

54-119. A Stray Loss Problem in Transformer Tanks. F. J. Vogel and E. J. Adolphson, Allis-Chalmers Mfg. Co. Re-presented for discussion.

9:30 a.m.—Carrier Current

54-85. A New Carrier Current Line Trap for Power Line Application. F. D. Johnson, F. W. Lindsay and Zeno Neri, Westinghouse Electric Corp.

54-2. Planning the Carrier Facilities for a Utility System. J. C. G. Carter, Westinghouse Electric Corp.

54-86. High Speed Control by Frequency-Shift Audio Tones. D. C. Pinkerton and L. C. Widmann, General Electric Co.

54-12. Application Guide for Power Line Carrier. Project Subcommittee #2 of the Committee on Carrier Current.

9:30 a.m.—Feedback Control Systems

CP.** A Note on the Analysis of Backlash and Hysteresis in Feedback. L. M. Vallese, Brooklyn, New York.

CP.** Automatic Flight Control Using Rate Gyros for Unlimited Maneuvering. C. R. Hanna, K. A. Oplinger and G. R. Douglas, Westinghouse Electric Corp.

CP.** Cross-Coupling in Two-Channel Servos. E. L. Peterson, General Electric Co.

54-124. The Application of Short Time Memory Devices to Compensator Design. D. J. Ford and J. F. Calvert, Northwestern University.

9:30 a.m.—Infrared Transducer Systems

CP.** Infrared Detectors and Techniques for Comparison. A. J. Cussen, U. S. Naval Ordnance Lab.

CP.** Some Aspects of Infrared Image Devices. G. A. Morton, RCA Labs.

CP.** Instrumentation Problems with Infrared Detectors. W. G. Fastie, The Johns Hopkins University.

CP.** Photoconductive Detectors and Transducer Systems. R. W. Paulson, General Electric Co.

9:30 a.m.—Conference on Selenium and Tellurium

CP.** A General Mode of the Selenium Semiconductor. H. W. Henkels, Westinghouse Electric Corp.

CP.** Surface States in Selenium. K. Lehovec, Sprague Electric Co.

CP.** Microstructures in Selenium. E. F. Losco, Westinghouse Electric Corp.

CP.** Properties of Liquid Selenium. J. Maczuk, University of Pennsylvania.

CP.** Diffusion Phenomena in Se-Metal Contacts. A. C. English, General Electric Co.

CP.** Effects of Thallium in Counter-Electrode Materials. H. Bandes, Sylvania Electric Products, Inc.

9:30 a.m.—Magnetic Amplifiers

54-158. Analysis of a Single Core Magnetic Amplifier with Real Rectifier and Core Functions. Max Frank, Saul Rabotnick and J. R. Walker, Wayne Engineering Research Institute.

54-159. Fast Response Magnetic Amplifiers. G. E. Hughes and H. A. Miller, Raytheon Mfg. Co.

54-160. Frequency Response of a Resonant Dielectric Amplifier. G. W. Penney, E. A. Sack and E. R. Wingrove, Carnegie Institute of Technology.

CP.** Response Time of Magnetic Amplifiers. L. J. Johnson, D. & R. Ltd. and S. E. Rauch, University of California.

9:30 a.m.—Television Transmitting Equipment and Special Receiving Systems

54-165. High Gain Side-Firing Helical Antennas for Ultra High Frequency Television Broadcasting. H. G. Smith, Cornell University.

CP.** The Wavestack, a New Type of Antenna for VHF Broadcasting. G. B. MacKimmie, Radio Corp. of America.

54-166. A UHF Transmitter Employing Klystron Power Amplifiers. W. H. Sayer, Allen B. Du Mont Labs. Re-presented for discussion.

CP.** An On-Channel Television Satellite System. L. E. Rawls, Station WSM.

CP.** Community TV Systems. M. F. Malarkey, Jr., Transvideo Corp.

9:30 a.m.—System Engineering

54-65. Coordination of Incremental Fuel Costs and Incremental Transmission Losses by Functions of Voltage Phase Angles. W. R. Brownlee, Southern Services, Inc.

54-66. Loss Evaluation—I Losses Associated with Sale Power in Phase Method. D. C. Harker, Commonwealth Associates, Inc.; W. E. Jacobs, Consumers Power Co., and R. W. Ferguson and E. L. Harder, Westinghouse Electric Corp.

54-67. Loss Evaluation—II Current- and Power-Form Loss Formulas. E. L. Harder, R. W. Ferguson, Westinghouse Electric Corp. W. E. Jacobs, Consumers Power Co. and D. C. Harker, Commonwealth Associates, Inc

54-68. A Transmission Loss Penalty Factor Computer. C. A. Imburgia and G. W. Stagg, American Gas & Electric Service Corp.; L. K. Kirchmayer, General Electric Co .

CP.** Application of Penalty Factor Computer on American Gas and Electric System. G. C. McDaniel, V. R. Peterson and A. H. Willennar, American Gas and Electric Service Corp.

9:30 a.m.—Switchgear

54-129. Short-Circuit Calculating Procedure for Direct-Current Systems with Motors and Generators. W. R. Crites and A. G. Darling, General Electric Co.

54-137. Mechanical Properties of Aluminum Electrical Bus. G. W. Stickley and C. O. Smith, Aluminum Co. of America.

54-136. Transient Voltage and Current Requirements of Main-Field Circuit Breakers for Synchronous Machines. M. E. Horn and J. C. Cunningham, Westinghouse Electric Corp.

54-140. Measurement of Current Density in the High Current Arc. W. F. Skeats and C. L. Schuck, General Electric Co.

54-138. Short-Circuit Forces in Isolated-Phase Buses. W. R. Wilson and L. L. Mankoff, General Electric Co.

2:00 p.m.—Mining and Metal Industry

CP.** Characteristics of Magnetic Amplifiers for Industrial Processes. R. G. Beadle and B. P. Chausse, General Electric Co.

CP.** Control Equipment for Sheet Shearing Lines, Fairless Works. R. P. Forrestal, Cutler-Hammer, Inc.

CP.** A Two Motor AC Mine Hoist Control System. A. H. Miles, Electric Controller & Mfg. Co.

CP.** Performance of A. C. Cranes. R. W. Wickersham, Westinghouse Electric Corp.

2:00 p.m.—Rotating Machinery

54-100. Single Phase Operation of a Three-Phase Motor with a Simple Phase Converter. R. Habermann, Jr., General Electric Co.

CP.** Calculation of Temperature Rise of Intermittent Duty Motors with an Electronic Thermal Analog Computer. W. R. Hoffmeyer and E. R. Cunningham, General Electric Co.

CP.** A New Homopolar Motor. Y. H. Ku and Ahmad Kamal, Moore School of Electrical Engineering.

CP.** Characteristics of Alnico VI in Two-Pole Permanent Magnet Alternators. J. M. Shulman, Westinghouse Electric Corp.

2:00 p.m.—Transformers

54-120. Transformer Measurement Methods. Progress Report of Working Group on Instrumentation and Measurement.

54-47. A New Development in High Voltage Transformers. H. B. Hansen and F. J. Vogel, Allis-Chalmers Mfg. Co.

CP.** Effect of Circuit Reclosing Practice on Winding Temperature Limits During Short Circuit Conditions. J. E. Clem, Test Inspection Service.

54-121. The Functional Evaluation of Insulation for Small Dry-Type Transformers. R. L. Hamilton and H. B. Harms, General Electric Co.

2:00 p.m.—Feedback Control Systems

CP.** Impact-Momentum Method of Servo Analysis. Ira Ritow.

54-125. Linear Compensation of Saturating Servomechanisms. J. R. Burnett, Purdue University. P. E. Kendall, Cook Research Labs.

54-44. An Investigation of the Switching Criteria for Higher Order Contactor Servomechanisms. I. Bogner, Cook Research Labs., and L. F. Kazda, University of Michigan.

54-126. The Transient Performance of Servomechanisms with Derivative and Integral Control. R. C. Lathrop and D. Graham, Wright Air Development Center.

54-127. A Graphical Procedure for Determining the Gain of a Servomechanism for a Specified Maximum Modulus Less Than Unity. T. J. Higgins, University of Wisconsin.

2:00 p.m.—Symposium on High-Frequency Conductors, Cables and Connectors

CP.** Styroflex Semi-Flexible Air-Dielectric Coaxial Cable. E. J. Merrell and A. L. McKean, Phelps Dodge Copper Products Corp.

CP.** Shielding of Communication Cables. F. H. Gooding and H. B. Slade, Okonite Co.

CP.** Microstrip—A Printed Microwave Transmission System. H. F. Engelmann, Federal Telecommunication Labs., Inc.

CP.** Printed Circuits. O. I. Steigerwalt, Erie Resistor Corp.

54-179. An Annular Waveguide Rotary Joint with Waveguide Feed. L. D. Breetz, Naval Research Lab.

2:00 p.m.—Conference on Selenium and Tellerium

CP.** Selenium-Tellerium Alloys. P. H. Miller, Jr., University of Pennsylvania.

CP.** Thermoelectric Effect of Intrinsic Semiconductors with Lattice Defects. S. Tanuma, Tohoku University.

CP.** Intrinsic Lattice Defects in Tellruium. H. Fritsche, Purdue University.

CP.** Liquid Tellurium. A. Epstein and H. Fritzsche, Purdue University.

CP.** Substitute for Selenium in Rectifiers. J. Cataldo, International Rectifier Corp.

CP.** Capacity-Voltage Studies on Selenium Rectifiers. J. Marinace, General Electric Co.

CP.** Properties of Selenium Contacts. C. T. Niu, Westinghouse Electric Corp.

2:00 p.m.—Magnetic Amplifiers

54-161. Flux Resetting Characteristics of Several Magnetic Materials. Hoobert Huhta, General Electric Co.

CP.** Magnetic Characteristics Pertinent to the Operation of Cores in Self-Saturating Magnetic Amplifiers. R. W. Roberts, Westinghouse Electric Corp.

CP.** A Curve Tracer for Displaying the B-H Characteristics of Small Toroidal Cores. C. A. Booker, Jr., New England Power Service Co.

CP.** On the Operation of Magnetic Amplifiers with Various Types of Loads. L. A. Finzi and R. R. Jackson, Carnegie Institute of Technology.

2:00 p.m.—Broadcast Receivers and Automatic Transmitters

CP.** Very Small Speaker-Type Personal Broadcast Receiver. K. James, Emerson Radio & Phonograph Corp.

CP.** An Improved Vertical Sync Circuit. A. J. Levine, H. Altman and L. Feit, Federal Telecommunications Lab.

54-167. A Radio Relay Remote Control System for FM Broadcast Stations. T. R. Humphrey, Rural Radio Network.

CP.** Automatic Remote Broadcast Stations. S. H. VanWambeck, Hammarlund Mfg. Co.

54-6. Torque Requirements of a Radar Antenna. Melvin Mark, Raytheon Mfg. Co.

2:00 p.m.—Switchgear

54-139. Flexible High Power Laboratory Capacitor Bank for Variety of Switching Tests to 65,000 KVAR, R. E. Friedrich and D. J. Burns, Westinghouse Electric Corp.

54-141. Cantilever Loaded Insulators for Isolated Phase Bus. K. T. Ashdown and N. Swerdlow, General Electric Co.

54-128. A Guide for the Ice Testing of Outdoor Disconnecting Switches. Working Group of the Switches, Fuses and Insulators Subcommittee.

CP.** High Voltage Switching on Unit Substation Transformers. H. S. Gates and H. G. Barnett, Westinghouse Electric Corp.

CP.** A New 161 kv 10 Million KVA Oil Circuit Breaker. L. J. Linde, A. E. Kilgour, Allis-Chalmers Mfg. Co.

2:00 p.m.—Basic Sciences

54-106. Eddy Current Losses in a Semi-Infinite Solid Due to a Nearby Alternating Current. H. Poritsky and R. P. Jerrard, General Electric Co.

54-146. Eddy-Current Phenomena in Ferro-Magnetic Materials. H. M. McConnell, Carnegie Institute of Technology.

54-109. Flow of Energy in Synchronous Machines. E. I. Hawthorne, University of Pennsylvania.

CP.** Characteristics of the High Current Argon Arc with Various Electrode Materials. J. W. Dziminaski, Allis-Chalmers Mfg. Co. and T. B. Jones, The Johns Hopkins University.

CP.** The Measurement of Electrostatic Potential Due to Net Ion Space Change in Air. J. S. Carroll and S. R. Hammond, Stanford University.

CP.** Conference paper; no advance copies are available; not intended for publication in Transactions.

CONTINUED FROM PAGE 2

of the Westinghouse Lamp Division offers the only opportunity in the United States to see all stages of incandescent lamp manufacture under one roof. The tour, composed of small groups of AIEE members conducted around the plant by engineers, will show the processing of tungsten from raw ore through various metallurgical processes to wire and coils. The manufacture of component parts, final lamp assembly, quality control procedures, and packaging will also be shown.

Allen B. DuMont Laboratories, Clifton, N. J. (Thursday afternoon, January 20)—The Instrument and Cathode-Ray Tube Divisions plants of DuMont offer an interesting trip for AIEE members. At the Instrument Division visitors will see the assembly of cathode-ray oscilloscopes and demonstrations of the latest models of these indispensible testing devices. At the Tube Division, the methods of manufacturing cathode-ray tubes, including picture tubes for televion sets, will be shown and described.

ETA KAPPA NU DINNER: The Annual Recognition Dinner of the Eta Kappa Nu, electrical engineering honor society, will be held Monday evening, January 18, 1954, at 6:45 p.m. in the Keystone Room of the Hotel Statler. Dress is informal. Ladies and guests are cordially invited as it is not necessary to be a member of Eta Kappa Nu to attend. Dinner, including tax and gratuities, will be $5.75 per person. Checks should be made out to "New York Alumni Chapter Eta Kappa Nu." Reservations should be sent to J. W. Steiner, Dept. 2411, Federal Telecommunication Laboratories, 500 Washington Avenue, Nutley, New Jersey.

At the dinner, the Eta Kappa Nu Plaque designating the most outstanding young electrical engineer for 1953 will be awarded to P. A. Abetti, General Electric Company, Pittsfield, Mass. Messrs. A. G. Kegel, Westinghouse Electric Corp., Baltimore, Md., and J. E. Jacobs, General Electric X-Ray Company, Milwaukee, Wis., will be cited for Honorable Mention. The recognition was created to emphasize among electrical engineers that their service to mankind is manifested not only by achievements in purely technical pursuits, but also by contributions to his profession, community, church and by cultural achievements.

COMMITTEE LIST: Members of the 1954 Winter General Meeting Committee are: C. T. Hatcher, chairman; A. J. Cooper, vice-chairman; J. J. Anderson, secretary; C. S. Purnell, budget co-ordinator; M. D. Hooven, Vice-President, District 3; L. F. Hickernell, chairman, Committee on Technical Operations; R. T. Ferris, publicity; L. F. Stone, general session; J. G. Derse, dinner-dance; D. E. Sullivan, inspection trips; C. F. Bolles, smoker; Sidney Friend, Jr., theater-radio-television; W. G. Vieth, hotel accommodations; H. E. Martin, registration; Mrs. E. S. Banghart, ladies' entertainment; R. T. Weil, monitors.

Issued by
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
33 West 39th Street, New York 18, N. Y.
PRINTED IN U.S.A.