

SOUTH EAST AND SOUTH CENTRAL DISTRICT MEETING

April 8 - 10, 1959



Atlanta, Georgia

Headquarters: Dinkler Plaza Hotel

Schedule of Events

Tuesday

District Executive Committee Meeting
Registration—Afternoon

Wednesday

Registration—8:30 A.M.
Ladies Hospitality—8:30 A.M.
Ladies Breakfast and Fashion Show
General Session—9:30 A.M.
General Luncheon—12 Noon
Technical Sessions—2:00 P.M.
Inspection Trips—P.M.
Student Papers—2:00 P.M.
Social Hour—6:00 P.M.

Thursday

Student Papers—8:30 A.M.
Ladies Tour to Cyclorama
Technical Sessions 9:00 A.M.-2:00 P.M.
Inspection Trips—A.M. & P.M.
Social Hour—6:00 P.M.
Dinner-Dance—7:00 P.M.

Friday

Student Meeting—8:30 A.M.
Technical Sessions—9:00 A.M.-2:00 P.M.
Inspection Trips—A.M. & P.M.



Aerial View of Downtown Atlanta

Atlanta, Georgia, will be host to AIEE Joint District Meeting for the Southeast District 4 and South Central District 13, April 8-10, 1959, with headquarters in the Dinkler Plaza Hotel. "Industry is Humming Dixie" has been selected as the theme of the meeting which will feature technical sessions of interest to everyone. Social events will be outstanding. Inspection trips of unusual interest have been arranged.

GENERAL SESSION

The General Session will be called to order in the Dinkler "B" Room at the Dinkler Plaza Hotel at 9:30 A.M., Wednesday, April 8, 1959, by R. G. Elliott, General Chairman of the Joint District Meeting. His Honor, W. B. Hartsfield, Mayor of Atlanta, will give the address of welcome and present Keys to the City to Messrs. Herbert W. Oetinger and Charles P. Knost, Vice Presidents of District 4 and 13 of AIEE. The principal speaker will be Dr. E. D. Harrison, President of the Georgia Institute of Technology. He will have as his subject the theme of the Joint District Meeting, "Industry is Humming Dixie."

GENERAL LUNCHEON

At the **Wednesday** noon General Luncheon, Dr. Pierce Harris, Pastor of the First Methodist Church of Atlanta, will be the principal speaker. Mr. Clifford B. McManus, Chairman of the Board of the Southern Company, will be presented with his certificate as a Fellow in the American Institute of Electrical Engineers by Mr. W. E. Mitchell, a "Member for Life" of the Institute.

REGISTRATION

A unique method of recording and sorting requested information will be used. A telephone communication link between the campus of Georgia Tech and the Hotel lobby will convey the information. In addition a closed circuit television will display the computer operation at the Hotel.

Advance registration cards should be mailed to D. C. Kyker, 1860

Peachtree St., N.W., Atlanta 2, Georgia, in order to avoid delay. Members may pay registration fees upon arrival when they pick up identification badges, programs, etc. **The Registration Desk, in the main lobby of the Dinkler Plaza Hotel, will be open Tuesday afternoon, April 7, for those arriving early, and daily thereafter** during the meeting. The registration fees payable at the meeting will be \$3.00 for members and \$5.00 for nonmembers.

Off-street **parking** for one thousand cars is available in the vicinity of the hotels. Pick-up and delivery service for cars is also available at the hotel entrances. **Airport** limousines leave from all downtown hotels and all airline ticket offices are located directly across the street from the Dinkler Plaza. **Railroad** transportation must be arranged at either the Atlanta Terminal or Union Station. The Union Station is located four blocks from the Dinkler Plaza and the Terminal Station six blocks.

A Housing Bureau has been set up to handle **advance hotel reservations**. All reservations should be made through the Housing Bureau, AIEE, Room 720, Rhodes-Haverty Building, Atlanta, Georgia. Confirmation will be mailed to members directly by the hotel accepting the reservation. If rooms at rates requested are not available, room at the next higher rate available will be assigned. In case assistance is needed, the Chairman, Hotel Committee, should be contacted. Address requests to John A. Busha, Chairman, Hotel Committee, Southern Bell Telephone and Telegraph Company, 729 Hurt Building, Atlanta, Georgia.

A hotel reservation and rate card is enclosed with this announcement. As indicated, it should be sent directly to the Housing Bureau. If the card is mislaid or lost, write either to Mr. Busha or the Housing Bureau. Please indicate on reservation cards the time of arrival and departure. If it is necessary to correspond with the Housing Bureau or Hotel regarding room reservations, please mail a copy of the letter to Mr. Busha. If an acknowledgment from the Hotel is not received within ten days, write to the Housing Bureau, furnishing duplicate information.

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SOUTH EAST AND SOUTH CENTRAL DISTRICT MEETING — PROGRAM — Atlanta, Georgia, April 8-10, 1959

ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40¢ each (80¢ 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 to those who wish to avoid remittance, by check or otherwise. The Transactions Papers will also be published in the bimonthly publications in Parts I, II and III as noted.

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.

Tuesday, April 7

A.I.E.E. District Executive Committee Meeting.

Wednesday, April 8

8:30 A.M.—Registration

Dinkler-Plaza Lobby

9:30 A.M.—GENERAL SESSION

Dinkler B

Introduction—R. C. Elliott, General Chairman, Vice President, Southern Bell Tel. & Tel. Co.

Welcome Address—Mayor W. B. Hartsfield

Address—President L. F. Hickernell

Address—Dr. E. D. Harrison, President, Georgia Institute of Technology

12 Noon—GENERAL LUNCHEON

R. G. ELLIOTT, Presiding

Address—Dr. Pierce Harris, Pastor of First Methodist Church

Presentation of Fellow Certificate to Clifford B. MacManus

2:00 P.M.—Power Generation

Mirror Room

E. J. ARCHBOLD, Georgia Power Co., Presiding

59-497. Oliver Dam Hydro Plant Electrical Design. R. J. Kelly, III Georgia Power Co.

DP59-511 The Use of DC Overpotential Testing as a Maintenance Tool in the Industrial Plant. W. A. Weddendorf, Mutual Boiler and Machinery Ins. Co.

DP.* New Design Metalclad Switchgear for 4.16 KV Service. N. Kreekon, Allis Chalmers Co.

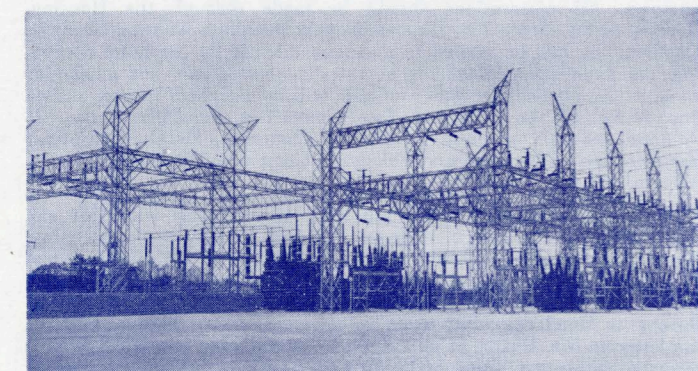
59-498. High Capacity Isolated Phase Buses—Laboratory & Field III Test Experience. G. E. Buchanan, H. K. Porter Co.

2:00 P.M.—Industrial Power Systems

Sky Room

E. R. FELTON, Esso Standard Oil Co., Presiding

DP.* Maintaining Reliable Relay Settings in an Industrial Power System. B. E. Crawford, Esso Standard Oil Co.



Georgia Power Company, Morrow Substation

DP.* Current Limiting Fuses. H. D. Kurt and T. Brandt, G. E. Co.
DP59-512 Power for the Missile Age. J. J. Berry, Smith & Gillespie Engineers.

DP.* Grounding Installations for Industrial Power Systems. H. V. Poe, Clemson Agricultural College.

DP.* Power Distribution in the World's Largest Integrated Paper Mill. E. H. Overby, Union Bag-Camp Paper Corp. and H. B. Greear, General Electric Co.

2:00 P.M.—Material Handling

Dinkler A

E. K. MURPHY, Presiding

DP.* Loading Operations for Aircraft. W. L. Brown, Lockheed Aircraft Corp.

DP.* Application of Reactor Control to Material Handling Equipment. H. A. Zollinger, Westinghouse Electric Corp.

DP.* Modern Approach to Material Handling Problems. W. D. Stoddart, Link Belt Co.

DP.* Material Handling in the Paper Industry. J. F. Steedley, Bowaters Engineering and Development Co.

2:00 P.M.—Management

Roof

DR. W. J. SEELEY, Duke University, Presiding

DP.* Presentation of Management Game. Prof. G. E. Maddox, Georgia Institute of Technology.

DP.* An Approach to the Management Orientation of New First Level Supervisors of Professional People. W. J. Paxton, Westinghouse Electric Corp.

DP.* Human Relations as a Fad, Fraud, and Fact of Life. Dr. H. R. Smith, University of Georgia.

DP59-501 General Management Development Program. G. W. Porter, Southern Bell Telephone & Telegraph Co.

2:00 P.M.—Student Papers

Roof

PROFESSOR WESTON, Presiding

Thursday, April 9

8:30 A.M.—Student Papers

Roof

PROFESSOR WESTON, Presiding

9:00 A.M.—Industrial Control

Mirror Room

D. F. CHAPPELL, R. J. Reynolds Tobacco Company, Presiding

DP.* Automatic Programming of Industrial Control. G. E. Co.

DP59-507 Design and Production of Cams By Use of a Computer and a Tape Controlled Milling Machine. J. Albert and L. B. Ratcliff, Lockheed Aircraft Corp.

DP.* Self-Adaptive Flight Controls. M. Dandois, General Dynamics Corp.

DP.* Introduction to Static Switching. A. K. Ramsey, Louisiana State University.

9:00 A.M.—Computers

Sky Room

W. J. McKUNE, Georgia Institute of Technology, Presiding

DP59-510 Electrical Distribution System Calculations Using the Digital Computer. Shirley C. Mewborn, Southern Engineering Co.

DP.* Use of Computers in Preparation of Load Data for AC Analyzer Studies. M. O. Richter, Georgia Power Co.

DP59-514 Electronic Computers in Engineering. C. R. Murton, Southern Services, Inc.

59-502 A New Direct Matrix Inversion Method. R. B. Shipley and I. D. Coleman, T.V.A.

9:00 A.M.—Atomic Power in the Southeast

Dinkler A

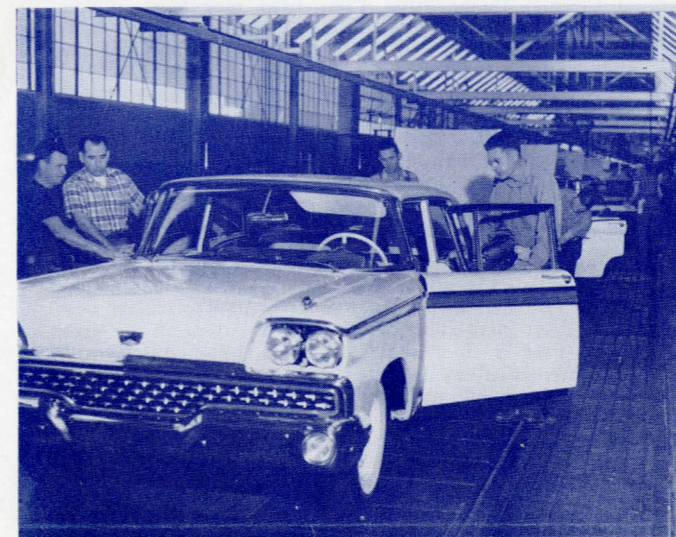
L. C. MOORE, Westinghouse Electric Corp., Presiding

DP.* Carolinas—Virginia Power Reactor. W. N. Thomas, Carolina-Va. Nuclear Power Assn. A. R. DelCamp and A. R. Jones, Westinghouse Electric Corp.

DP.* Atomic Power in the S.E.—Education and Research. Dr. W. B. Harrison, Georgia Institute of Technology.

DP59-515 Electrical Engineering in Atomic Powered Aircraft. C. W. Holland, Lockheed Aircraft Corp.

DP.* Nuclear Submarines. Capt. P. K. Taylor, U.S.N.



Ford Motor Company's Atlanta Assembly Plant

9:00 A.M.—Communications

Plaza B

J. M. STREET, JR., Southern Bell Tel. and Tel. Co., Presiding

DP.* Channelization of Radio. W. D. Baker and J. W. Joyner, Southern Bell Tel. and Tel. Co.

DP.* A Circular Polarization Duplexer for Millimeter Waves. R. G. Fellers, University of South Carolina.

DP.* The Telephone Industry's Part in Air Defense Communications. W. A. Russey, Southern Bell Tel. and Tel. Co.

DP.* Angular Modulation—Its Application to Telephone Carrier Systems. C. E. Green, Pan Handle Electric Construction Corp.

2:00 P.M.—Mining, Chemical & Petroleum Industry

Plaza B

T. V. BOCKMAN, Plantation Pipe Line Co., Presiding

DP.* The Application of Large Synchronous Motors for Gas Transmission. M. A. Hyde and D. C. Washburn, Westinghouse Electric Corp.
Other Papers Being Solicited.

2:00 P.M.—Transmission and Distribution

Mirror Room

T. J. ALLEN, Georgia Power Company, Presiding

DP59-503 Control of Switched Capacitors in Distribution Substations. J. D. Huddleston, III, Georgia Power Co.

DP59-513 Experience With Methods of Extending the Capability of High Voltage Air Break Switches. E. C. Rankin, Appalachian Electric Power Company.

DP.* Design, Application and Economics of SRT. A. R. Waehner, Line Material Co.

2:00 P.M.—Continuing Education for Engineers

Sky Room

W. J. MILLER, University of Alabama, Presiding

DP59-504 Engineering Training in an Operating Telephone Company. W. L. Sullivan, Southern Bell Telephone & Telegraph Co.

58-1152 A New Approach to Training Telephone Engineers. W. C. I. Burnett, Southern Bell Tel. and Tel. Co. and Dr. L. C. Adams, Savannah River Project.

DP.* Nuclear Reactor Engineering Course. H. H. Strozier, Georgia Power Co.

DP.* Lockheed Engineering Training Course. R. H. Hudson, Lockheed Aircraft Corp.

2:00 P.M.—Wire Communications

Dinkler A

W. C. BURNETT, Southern Bell Tel. and Tel. Co., Presiding

DP59-509 A Transposition System for Carrier Systems Up to 156 KC. Mrs. Bess M. Kirkland, Southern Bell Tel. and Tel. Co.

DP.* Bonding & Isolation of Telephone Cable. D. A. Greer, Southern Bell Tel. and Tel. Co.

DP.* Buried Polyethylene Insulated Cable for Intercity Toll Use. F. G. Taylor, Southern Bell Tel. and Tel. Co.

DP.* E-3 Repeater Application. J. W. Joyner, Southern Bell Tel. and Tel. Co.

Friday, April 10

8:30 A.M.—Student Meetings

Roof

9:00 A.M.—Cathodic Protection

Mirror Room

JOHN L. GRAY, Louisville Gas & Electric Company, Presiding

DP.* Deep Ground Beds for Use with Cathodic Rectifiers. D. L. Berryhill, Southern Bell Tel. and Tel. Co.

DP.* Corrosion Problem in Jacksonville, Fla. G. D. Boggs, Southern Bell Tel. and Tel. Co.

DP59-505 Deep Ground Beds for Cathodic Protection. S. E. Trouard and E. A. Wagner, Jr., New Orleans Public Service, Inc.

9:00 A.M.—Transformers & Rotating Machinery

Sky Room

R. O. LOOMIS, Georgia Power Company, Presiding

DP.* Principles of Design, Application & Operating Record of LTC Equipment. G. A. Wilson, Pennsylvania Transformer Co.

DP.* Evaluation of Various Types of Electric Motor Insulation. Allis Chalmers.

DP.* Unique Two-piece Stator for Small, Low Inertia Servo-motors. E. J. Moore, Wright Machinery Company.

9:00 A.M.—Instrumentation

Dinkler A

M. G. MYERS, Westinghouse Electric Corp., Presiding

DP59-506 Inflight Recordings—Test of Systems. J. Jangochian and T. K. Speer, Lockheed Aircraft Corp.

DP.* The Electrical Engineer in Chemical Process Instrumentation. G. Alford, Chemstrand Corp.

DP.* Instrumentation and Process Control. W. R. Mickelson, G. E. Company.

DP.* Instrumentation in the Paper Industry. K. A. Riddle, Rome Kraft Paper Co.

9:00 A.M.—Basic Science

Plaza B

E. S. LAMMERS, University of Florida, Presiding

Symposium on Nuclear Radiation Protection. Dr. J. T. Wilson, Louis Allis Co., Moderator, H. H. Strozier, Ga. Power Co., Dr. M. M. Miller, Lockheed Aircraft Corp. and Dr. L. C. Adams, Savannah River Project.

DP.* Thermo-Electricity. J. C. R. Kelley and S. J. Angello, Westinghouse Electric Corp.

DP.* Recent Advance in Magnetic Tape. J. L. Kamefke, Minnesota Mining & Mfg. Co.

2:00 P.M.—Automatic Load & Frequency Control

Mirror Room

W. R. BROWNLEE, Southern Services, Inc., Presiding

DP59-508 Reliability in Automatic Dispatching Systems. M. J. Brown and R. L. Tremaine, Westinghouse Electric Corp.

DP.* Experience with ADS on San Antonio System. Co-authored by General Electric Co. and San Antonio Power Co.

DP.* Modern Trends in Load Frequency Control. W. S. Bloor, Leeds and Northrup.

2:00 P.M.—Design for Maintenance

Plaza B

S. HINES, Westinghouse Electric Corp., Presiding

DP.* Design for Maintainability—Philosophy of. H. R. Nuce, Lockheed Aircraft Corp.

DP.* Design for Maintainability—Application of. H. R. Nuce, Lockheed Aircraft Corp.

DP.* Radio Circuitry—Design for Maintenance. J. Hunt, Collins Radio Co.



The Lockheed JetStar on the Runway at Dobbins Air Force Base, Ga.

Rates for the rooms at the hotels in the vicinity of the headquarters are as follows:

Hotel	For Two Persons			
	Single	Double Bed	Twin Beds	Suites
Dinkler Plaza (Hqtrs.)	\$7.00-12.50	\$10.00-12.50	\$14.00-16.50	\$12.50-41.00
Piedmont (Across St. from Hqtrs.)	6.00- 9.00	9.50-11.00	10.00-15.00	25.00-30.00
Atlantan (1 block from Hqtrs.) ..	5.00- 7.50	7.00- 9.00	9.00-11.00	20.00
Georgia (1 block from Hqtrs.) ...	5.00- 8.00	7.00- 9.00	8.50-12.00	18.00-20.00
Peachtree on Peach- tree (2 blocks from Hqtrs.) ...	6.00- 7.00	8.50-10.50	9.00-11.50	11.00-16.00
Henry Grady (2½ blocks from Hqtrs.)	7.00-14.00	10.00-16.00	11.00-16.00	20.00-35.00
Students, 2 or 3 to a room	2.50 per person			

Reservations must be received by the Housing Bureau not later than March 20. Members are urged to mail their reservations as early as possible, so as to be assured of getting their desired accommodations. Every effort will be made by the local committee and the Housing Bureau to handle reservations received after the deadline, but this may prove difficult after the Hotel has released rooms which were held for this meeting. Rooms will be held only until 6:00 P.M. on the date of arrival unless a later hour is specified.

SOCIAL HOUR

On **Wednesday** evening, April 8, from 6:00 P.M. to 7:00 P.M. a "Get Acquainted Social Hour" will be held in room Dinkler B. A second social hour will be held in room Dinkler B on **Thursday** beginning at 6:00 P.M. to 7:00 P.M. These social hours are on a dutch, pay as you go, cash basis.

DINNER-DANCE

A very attractive full evening's entertainment has been arranged in the form of a Dinner-Dance on **Thursday** evening, April 9. Bill Clarke's orchestra will afford us the music. For immediate after-dinner relaxation, an excellent floor show has been arranged. Tickets to this occasion will be \$6.00 per person.

LADIES EVENTS

The following events should provide interesting entertainment for the ladies accompanying their husbands to the District Meeting. A **Ladies Hospitality Room** will be maintained in Plaza "A" throughout the Convention. Each morning from 8:30 to 9:30, coffee and doughnuts will be served. This room will be available at all times as a focal point for Ladies Activities.

On **Wednesday** morning there will be a Courtesy Breakfast and Fashion Show in the Magnolia Tea Room, 6th floor, at Rich's Inc., one of the nation's largest department stores.

On **Thursday** morning there will be a tour including a visit to the **Cyclorama**, one of the world's largest and most famous paintings, depicting the Battle of Atlanta; the Dogwood Trail and Atlanta's residential section. This tour will be concluded by a smorgasbord luncheon at the Luau, a famous Polynesian Restaurant. **Thursday** will be climaxed by a **Dinner-Dance at 8:30 P.M.**

INSPECTION TRIPS

A program of inspection trips of both technical and general interest has been arranged for those attending the District Meeting. Since the number of persons who may be accommodated on each of these trips is limited, members who are interested are urged to obtain full details at the Inspection Trips Desk immediately after arrival.

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.

Carling Brewing Co. (Wednesday afternoon)—Visitors will see a new multi-million dollar plant—the first brewery built in the south in 25 years. It consists of four major units—the brew house, storage and fermentation building, powerhouse, and bottling and shipping building, all located on a 35-acre tract. Exceptionally high quality standards required the installation of complicated control equipment. Carlings will entertain the group in their luxuriously appointed lounge.

Georgia Power Co. 230 KV., Morrow Substation (Wednesday afternoon)—Visitors will be shown the largest substation on the Georgia Power Company system. Power is brought to the substation over 2-230 KV lines from Plant Yates and leaves over 8-115 KV and 3-46 KV lines. Equipment includes 2-125000 KVA, 230/115V auto

transformer and 2-20,000 KVA 115/43.8 KV L.T.C., transformer. The station is fully automatic with superimposed supervisory control from Boulevard Dispatcher's office.

Lockheed Aircraft Corporation (Thursday morning)—Visitors will see the largest aircraft plant—76 acres under one roof—in the United States. Five aircraft final assembly lines, with complete fabrication and subassembly support, can be operated simultaneously in this building. This plant builds America's first prop-jet cargo/transport. Design work is underway in the Nuclear Laboratories on a nuclear powered aircraft. Design and experimental testing is being carried out on a vertical rising jet aircraft, drones and drone launchers, big jet cargo transport and boundary layer control planes. Other products are nuclear reactors for process heat in industry and for training and research in colleges; also support equipment for missiles and space craft.

Owens-Illinois-Glass Container Division (Thursday afternoon)—Visitors will tour the world's most modern glass container plant with the two largest glass-melting furnaces of this type in the world. Unique in its field is the "batch" operation which automatically measures and mixes the raw materials and conveys them to the furnaces on demand without a single human action. After reaching 2700°F the molten glass flows to forming machines where bottles and jars are formed. These newly blown containers move through annealing lehrs to remove stresses and then through the labeling and packaging processes. The electrical system consists of dual power supplies to critical loads. Small power and lighting loads are fed through a 480Y/277 volt system.

Ford Motor Company—Assembly Plant (Thursday afternoon)—One of the major automobile plants in the nation covering more than 1,000,000 sq. feet with a capacity of 640 Fords per day will be shown. The assembly area itself is more than a quarter mile in length. The precise timing and automatic control of equipment and processes is a delight to behold.

Georgia Institute of Technology Computer Center (Thursday afternoon and Friday morning)—Participants (limited to 30 each trip) will play the management game. They will make decisions in connection with financing, budgeting, product pricing, etc., of a mythical company. These decisions will be fed into a computer which will evaluate their effect on the company for an 8 year period.

Southern Railway Company's Inman Yards (Friday morning)—Visitors will see the newest classification yard in the southeast with a capacity of 8,170 cars and 50 diesel units. A complete system of automatic car retarders is used in classifying cars. Communications are carried on through a system of 4 T.V. tower, 4 video amplifier houses, 60 paging speakers, 90 talk back speakers, 400 ground line speakers and 40 walkie-talkie radios.

Atlantic Steel Company—Rod & Merchant Mill (Friday morning)—Visitors will be shown one of the most modern steel rolling mills in the world. The combination rod and merchant bar mill produces a variety of products ranging from #5 rod, coiled, to 4" channels and 4" angles. Rod finishing speed is 5,000 feet per minute. The mill contains 13 main drive motors totalling 8,300 horsepower. These motors operate at 700 volt D.C. Two pumpless type ignitron rectifiers rated 1500 KW and 3500 KW provide D.C. A 25-minute color movie of the mill will be shown prior to the trip through.

Telephone Company (Friday afternoon)—Visitors will see the Toll operating and test rooms where the equipment for operating and testing of automatic toll calls, television operating center, microwave radio relay terminal equipment, carrier telephone circuits and special services will be shown and explained by a tour leader. Lunch will be served in the Company Cafeteria prior to starting the tour.

COMMITTEES

Members of the Joint District Meeting Committee are: Robert G. Elliott, General Chairman; John W. Davis, Vice Chairman; William S. Brown, Secretary-Treasurer; Mrs. John W. Davis, Women's Activity; Thomas J. Allen, Transportation; John A. Busha, Hotel; Cherry L. Emerson, Finance; John D. Howard, Technical Program; John C. Howell, Fersommling; Daniel C. Kyker, Jr., Registration; Lex H. Curtis, Jr., Publicity; Elwyn G. Riley, Inspection; Professor Edward R. Weston, Students Activities; J. Frank Willett, Dinner-Dance; William J. McKune, Vice Chairman, Georgia Section AIEE.

Issued by

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

33 West 39th Street, New York 18, N. Y.

PRINTED IN U.S.A.