

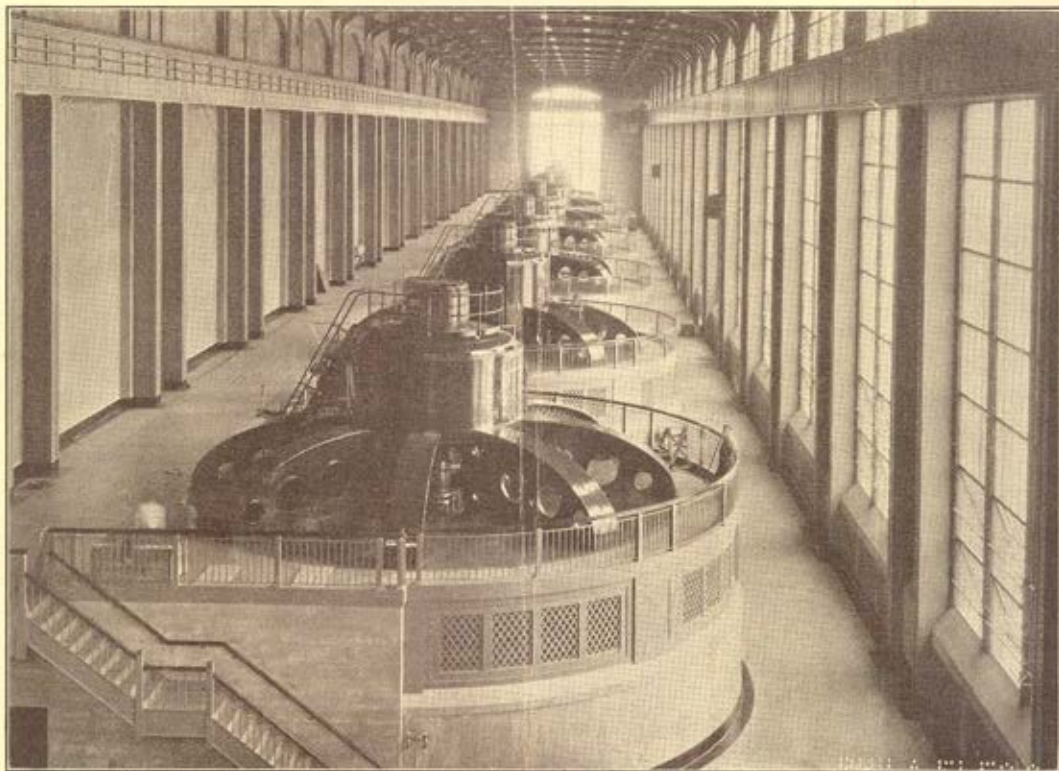
American Institute of Electrical Engineers



~ SIXTH ~

MIDDLE EASTERN DISTRICT MEETING

Philadelphia October 13-15
Nineteen-thirty At the Benjamin Franklin Hotel



CONOWINGO STATION TURBINE HALL

OUTLINE OF PROGRAM

Monday, October 13

- 9:00 a.m. Registration
- 10:00 a.m. Opening of Meeting
- 10:30 a.m. Technical Session on Communication
- 12:30 p.m. Joint Luncheon Meeting of Branch Counselors and Branch Chairmen
- 1:30 p.m. Inspection Trips
- 2:00 p.m. Parallel Sessions A and B
 - A—Technical Session on Hydroelectric Power
 - B—Conference of Branch Counselors and Branch Chairmen
- 8:30 p.m. Informal Reception and Dance

Tuesday, October 14

- 9:00 a.m. Inspection Trips
- 9:30 a.m. Technical Session on Electrical Equipment and Selected Subjects
- 12:30 p.m. Luncheon Meeting of Branch Counselors
- 12:30 p.m. Luncheon Meeting of Branch Chairmen
- 1:30 p.m. Inspection Trips
- 2:00 p.m. Technical Session on Transmission
- 7:00 p.m. Banquet—Followed by Entertainment and Dancing

Wednesday, October 15

- 9:00 a.m. Inspection Trips
- 9:30 a.m. Technical Session on Railway Electrification and Electric Traction
- 2:00 p.m. Inspection Trips
- 2:30 p.m. Board of Directors' Meeting

Thursday, October 16

- 10:00 a.m. Inspection Trip to Conowingo Hydro-Electric Station

Note: For a detailed description of inspection trips see paragraphs under the heading "Inspection Trips."

Middle Eastern District Meeting

Philadelphia, October 13-15



THE sixth meeting of the Middle Eastern District of the A.I.E.E. will be held in Philadelphia, October 13-15 inclusive, with headquarters at the Benjamin Franklin Hotel. An excellent program of events comprising five technical sessions, a Conference of Branch Counselors and Branch Chairmen, an informal reception with dancing, a banquet followed by entertainment and dancing, a number of interesting inspection trips, and facilities for sports at the various country clubs, is offered to those who will attend the meeting. Special trips of particular interest to the visiting ladies are arranged in the Ladies' Program.

Engineering Papers

Technical papers of unusual interest, some of which are associated with local engineering projects such as the Pennsylvania Railroad electrification, Reading Company's railroad electrification, substations of the Broad Street Subway, using railroad rights-of-way for power transmission purposes, a new system of speed control for A.C. motors, damper windings for water wheel generators, trend in design of large hydroelectric generators, lightning protection from the operating company's point of view, and transformers with load ratio control, are to be presented in five technical sessions. The subjects of Radio and Communication; Hydroelectric Power; Electrical Equipment; Transmission; and Railway Electrification and Electric Traction comprise the five technical sessions.

Entertainment

The entertainment features of the Meeting will be an Informal Reception with Dancing on Monday evening, and the Meeting Banquet followed by Entertainment and Dancing on Tuesday evening, both to be held in the Benjamin Franklin Hotel Ball Room.

A golf tournament has not been arranged, but facilities of the many attractive country clubs of the Philadelphia District will be available for those desiring to play golf.

Ladies' Entertainment

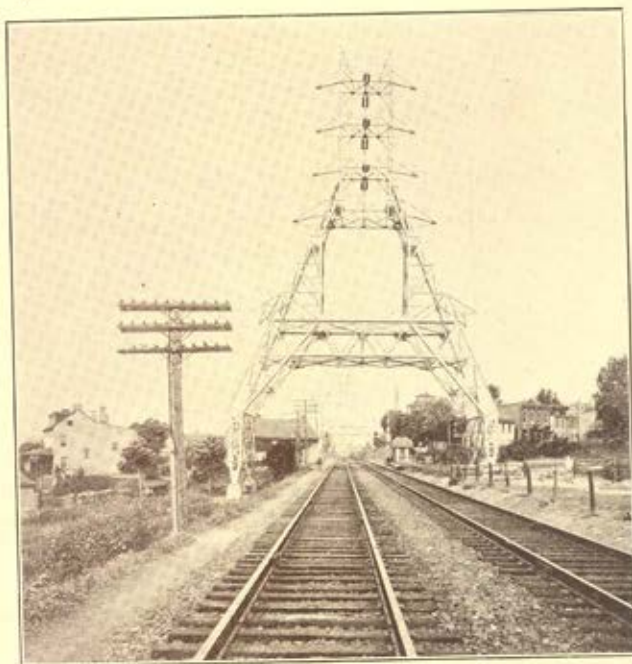
In addition to the Informal Reception and Banquet, the Ladies' Entertainment Committee has planned a tea, luncheon and bridge, a visit to Wanamaker's Store, a sightseeing trip of historical Philadelphia, as well as trips to the New Art Museum and Valley Forge. (See page 5.)

Registration

All who will attend the meeting should register in advance by mail. The postcard accompanying this announcement may be used for this purpose.

A fee of \$1.00 will be asked of members and a fee of 50c will be asked of students.

Those who will take inspection trips should register at the Registration Desk for them as far in advance as possible.



Transmission Line Towers over
Reading Railroad Tracks

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PROGRAM

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Monday, October 13

9:00 a.m.—Registration

10:00 a.m.—Opening of Meeting

Remarks—E. C. Stone

Vice-President, Middle Eastern District

Address of Welcome—Honorable Harry A. Mackey,
Mayor of Philadelphia

Remarks—William S. Lee, *President, A.I.E.E.*

Announcements—L. F. Deming,

Vice-Chairman, District Meeting Committee

10:30 a.m.—Technical Session on Communication

E. B. Tuttle, *Presiding*

Aeronautical Radio Communication

EUGENE SIBLEY

Department of Commerce, Washington, D. C.

Telephone Trunking Plant in a Metropolitan
Area

A. P. GODSHO

Bell Telephone Company of Pennsylvania

Miscellaneous Noise Measurements

J. C. STEINBERG

Bell System Laboratory

12:30 p.m.—Joint Luncheon Meeting of Branch
Counselors and Branch Chairmen

Speakers

E. C. Stone, *Vice-President, Middle Eastern District*

H. H. Henline, *Assistant National Secretary*

2:00 p.m.—Parallel Sessions A and B

A—Technical Session on Hydroelectric Power

Lyle A. Whitsit, *Presiding*

Hydraulic and Electrical Possibilities of High-
Speed Low-Head Developments

GEORGE A. JESSOP

S. Morgan Smith Company, and

C. A. POWEL

Westinghouse Electric & Mfg. Co.

Trend in Design and Capacity of Large
Hydroelectric Generators

M. C. OLSON

General Electric Company

Automatic Economy Control Applied to
Hydraulic Plants

S. LOGAN KERR

I. P. Morris Corporation

Damper Windings for Water Wheel
Generators

C. F. WAGNER

Westinghouse Electric & Mfg. Company

B—Conference of Branch Counselors and
Branch Chairmen

Professor H. E. Dyche, *Presiding*

Address

WILLIAM S. LEE

President, A.I.E.E.

How to Stimulate Student Interest in Branch
Meetings

S. E. MCKIBBEN, *Chairman*

Pennsylvania State College Branch

F. F. OSTERHOLTZ, *Chairman*

University of Cincinnati Branch

A Consideration of the Function of Student
Branches

G. F. LEYDORF, *Chairman*

Ohio State University Branch

L. FUSSELL, JR., *Chairman*

Swarthmore College Branch

The Counselor's Duties in a Well Organized
Student Branch

PROFESSOR H. B. DATES

Case School of Applied Science

A Review of Student Branch Activities in
District No. 2

PROFESSOR MORELAND KING

Lafayette College Section

Committee on Student Activities

8:30 p.m.—Informal Reception and Dance—
Benjamin Franklin Hotel Ball Room

Tuesday, October 14

9:30 a.m.—Technical Session on Electrical
Equipment and Selected Subjects

R. A. Hentz, *Presiding*

Air Conditioning in Industry

A. H. CLOGSTON

Cooling and Air Conditioning Corporation

Outdoor Switching Equipment at Northwest
Station Commonwealth Edison Company

W. F. SIMS and C. G. AXELL

Commonwealth Edison Company, Chicago

A New System of Speed Control—A.C.
Motor Driven Power Station Auxiliaries

A. M. ROSSMAN

Sargent & Lundy, Inc.

Transformers with Load Ratio Control

A. PALME

General Electric Company

Forces in Turbine Generator Stator Windings

J. F. CALVERT

Westinghouse Electric & Mfg. Company

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PROGRAM

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12:30 p.m.—Luncheon Meeting of Branch
Counselors

Business Session

Professor H. E. Dyche, *Presiding*

12:30 p.m.—Luncheon Meeting of Branch
Chairmen

L. H. Corn, *Chairman*

Student Branch, University of Pennsylvania, *Presiding*

2:00 p.m.—**Technical Session on Transmission**

R. A. Hentz, *Presiding*

Electrical Porcelain

H. M. KRANER

Westinghouse Electric & Mfg. Company

75-kv. Submarine Cable for Deepwater Station

R. W. WILBRAHAM

United Engineers & Constructors, Inc.

Magnitudes and Rates of Rise of Circuit

Breaker Recovery Voltages

R. H. PARK and W. F. SKEATS

General Electric Company

Lightning Protection—From the Operating
Company's Viewpoint

E. HANSSON

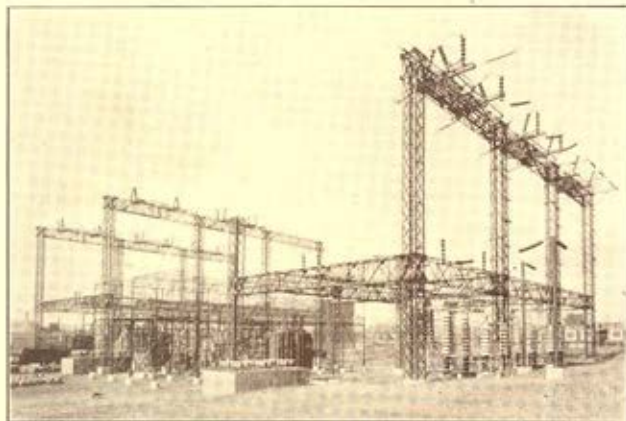
Pennsylvania Water and Power Company

7:00 p.m.—**Banquet Followed by Entertainment
and Dancing—Benjamin Franklin
Hotel Ball Room**

Wednesday, October 15

9:30 a.m.—**Technical Session on Railway Elec-
trification and Electric Traction**

G. I. Wright, *Presiding*



Lamokin Substation

Power Supply Facilities for Reading
Suburban Electrification

C. L. DOUB

Reading Company

Substations of Broad Street Subway of
Philadelphia

H. M. VAN GELDER

Department of City Transit

The Internal Combustion Engine as an
Adjunct to Electrification

A. H. CANDEE

Westinghouse Electric & Mfg. Company

Utilization of Railroad Rights of Way for
Electric Power Transmission and Coordi-
nation with Railroad Electrification

W. W. WOODRUFF

Philadelphia Electric Company

G. F. WRIGHT

Reading Company

Initiating an Electrification into Operation

H. C. GRIFFITH

The Pennsylvania Railroad

Modern Single-phase Motor for Railroad
Electrification

F. H. PRITCHARD and

FELIX KONN

General Electric Company

Ladies' Entertainment Program

Monday, October 13

- 9:00 a.m. Registration
- 10:00 a.m. Opening of Meeting
- 10:30 a.m. Visit to Wanamaker Store
- 3:00 to
- 5:00 p.m. Tea in the Betsy Ross Room of the
Benjamin Franklin Hotel
- 8:30 p.m. Informal Reception and Dance—Benjamin
Franklin Hotel Ball Room

Tuesday, October 14

- 10:30 a.m. Visit to New Art Museum
- 1:00 p.m. Luncheon and bridge at a Philadelphia
Country Club
- 7:00 p.m. Banquet, followed by Entertainment and
Dancing—Benjamin Franklin Hotel
Ball Room

Wednesday, October 15

- 10:00 a.m. Sightseeing Trip—Historical Philadelphia
- 1:00 p.m. Trip to Valley Forge

Within a short distance of the Meeting Headquarters are many places of historical interest, such as Independence Hall, Carpenters Hall, Betsy Ross House, Old Christ Church, and also the splendid home of the Ladies' Home Journal and Saturday Evening Post.

:: INSPECTION TRIPS ::

Inspection trips have been coordinated with the technical sessions and include widely different kinds of installations to appeal to the various interests of electrical engineers. All bus trips will start from the Benjamin Franklin Hotel. Each of the trips, with the exception of the one to Conowingo, can be completed in a morning or an afternoon, as scheduled. The Conowingo trip will start on Thursday, October 16, at 10:00 a.m., and is scheduled to arrive back at 5:00 p.m. A lunch will be provided at Conowingo without extra cost.

In addition to the scheduled trips which are listed below, special trips can be arranged to any particular points of interest, in or around Philadelphia, if there are enough applications to warrant them. The following are suggested as only a few of the many possible special trips of this kind: the Baldwin Locomotive Works and the General Steel Castings plant, which is adjacent to it, at Eddystone, about ten miles from Philadelphia; the J. G. Brill Company, manufacturers of electric cars, at 62nd and Woodland Avenue, Philadelphia; and the Richmond Steam Generating Station of the Philadelphia Electric Company at Delaware Avenue and Lewis Street, Philadelphia.

Tickets for all trips can be purchased at the Registration Desk where rates and any additional information can be obtained. In order to allow the committee ample time to complete arrangements, registration for all trips should be made as soon as possible.

Monday, October 13, 1:30 p.m.

R.C.A. Victor Corporation

Camden, N. J.

At this plant can be seen the manufacture of radio sets, electric phonograph and radio combinations, and electrically-recorded phonograph records.

Bell Telephone Company—Radcliff Station

There is included in this 15,000 terminal station, which went into service on March 1, 1930, the most modern type of dial equipment, together with associated operators' positions. There are an average of 49,000 originating calls and 12,000 incoming calls each day.

Plymouth Meeting and Westmoreland Substations Philadelphia Electric Company

Plymouth Meeting Substation, which receives power directly from Conowingo, is located about fifteen miles from Convention Headquarters and is the interconnection point of the Philadelphia Electric Company System, the Pennsylvania Power and Light Company, and the Public Service Corporation of New Jersey. Among the interesting features at this substation are the 230-kv. high

speed oil circuit breakers which have recently been installed together with associated high speed relay equipment. The three 133,000-kv.-a. transformer banks are equipped with a direct blower system on the radiators. Each bank has nominal voltages of 220-kv., 66-kv., and a tertiary winding of 13.2 kv. and tap changing under load. There are also three 30,000-kv.-a. synchronous condensers with high speed excitation. There are three 100,000-kv.-a., 66-kv. lines approximately ten miles in length which feed from this point to Westmoreland Substation, at Hunting Park Avenue and Westmoreland Street, Philadelphia. Here there is a 66-kv. yard and a 13.8-kv. yard with the building between which houses two synchronous condensers and the switchboards. A 300-kv. Kenetron cable test set is also installed at this substation.

Tuesday, October 14, 9:00 a.m.

Atwater Kent Manufacturing Company

Philadelphia

The Atwater Kent plant is one of the largest radio factories in the world. It consists of a thirty-two acre plant representing most modern design, containing over five miles of conveyor system. The capacity of this plant is over 12,000 radio sets a day.

Philadelphia Storage Battery Company

Philadelphia

In the Philadelphia Storage Battery Company plant, "Philco" and "Transitone" radio sets and also storage batteries are manufactured. The latter are of particular interest because they are made for a wide range of purposes such as control, telephone, motive power, locomotive, etc.

Philadelphia Rapid Transit and City Transit Substations

Pine Substation, which is located at Juniper and Waverly Streets, Philadelphia, is non-automatic and contains two 2500-kw. mercury arc rectifier units which feed the Broad Street Subway. Wyoming Substation, in the Frankford Section of Philadelphia, has its main interest in the fact that it is a full-automatic installation. It has three mercury arc rectifier units of 1000-kw. capacity each.

Tuesday, October 14, 1:30 p.m.

Pennsylvania Railroad—West Philadelphia Terminal and Lamokin Substation

At this time there is under construction a new, two-level terminal at West Philadelphia for both through traffic and the suburban electrified lines. The present Broad Street Station is to be abandoned as well as the elevated tracks leading into it along Market Street. An underground station is being constructed at Filbert Street and the Parkway for the suburban electrified lines. One of the major problems of this development is to maintain traffic during the rebuilding of the whole area. Lamokin Substation consists of two sections. The part which is owned and operated by the Philadelphia Electric Company includes an outdoor 13.2-kv. switching structure and a building containing three 15,000-kw. frequency converters. These units are built for either three phase or single phase, 25 cycle operation. They are now operating single phase. They supply power to an adjacent outdoor substation of the Pennsylvania Railroad Company where the energy is stepped up from 13.2-kv. to 132-kv. for the railroad transmission lines.

Wednesday, October 15, 9:00 a.m.

General Electric Company

68th and Elmwood Avenue, Philadelphia

The manufacture of switchgear, including equipment up to 250-kv., supervisory control and automatic station equipment. An interesting feature of this plant is the million volt testing laboratory.

INSPECTION TRIPS—*continued*

Westinghouse Electric and Manufacturing Company

Essington, Pa.

Large and small turbines and condensers are among the important types of equipment built in this plant. Electric welding and cutting of unusually thick plates can also be seen.

Wednesday, October 15, 2:00 p.m.

Reading Railroad—Electrification

A special train will leave from the Reading Terminal, 12th and Market Streets, and pass over the sections of the lines now being electrified. This will afford an excellent opportunity to view the overhead trolley wires which are under construction, as well as the unique transmission line towers of the 66-kv. Plymouth Meeting-Westmoreland lines of the Philadelphia Electric Company built over the Reading Company tracks. There is a car repair shop being built at Wayne Junction and now used for construction quarters. The beginning of the Wayne Junction frequency changer substation can also be seen. This trip is offered through the courtesy of the Reading Railroad Company.

American Brown-Boveri Company, and New York Shipbuilding Corporation

Camden, N. J.

In these plants can be seen the manufacture of transformers, mercury arc rectifiers, oil circuit breakers and voltage regulators. In the shipyards, freight and passenger vessels, as well as United States Navy Ships are under construction.

Deepwater Station

This plant, which is jointly owned by the American Gas and Electric, and the United Gas Improvement companies, is located on the east bank of the Delaware River about four miles south of Penns Grove, N. J. It might be called a double-purpose station, because it supplies both electric and steam service. Among the features of this plant are its 1200-pound steam pressure for generating purposes, and its bin and unit pulverized fuel systems. There are two 64,683-kv-a. cross compound units, each consisting of a 15,625-kv-a. high pressure and a 49,058-kv-a. low pressure turbine. There is a third high pressure turbine similar to those on the main units, from which steam is exhausted into high pressure evaporators used in the production of low pressure steam for delivery to a nearby process plant owned by E. I. duPont de Nemours & Co., Inc., who also receive the electrical energy from the same unit.

Thursday, October 16, 10:00 a.m.

Conowingo Hydro-Electric Station

This generating plant is located in Maryland on the Susquehanna River and is approximately 65 miles from Philadelphia and 57.7 miles from Plymouth Meeting Substation as measured along the 220-kv. transmission lines. It is the second largest single hydro-electric plant in the United States as it contains seven 54,000 hp. units or a total of 378,000 hp. Provisions are made for the future installation of four more units. Electricity is generated at 13.8-kv., transformed in four 80,000-kv-a. banks to 220-kv. and transmitted over two lines (three ultimate) to Plymouth Meeting Substation. The dam at Conowingo is nine-tenths of a mile in length between abutments, including the power house structure, and provides a net head of 89 feet. The pond is about 14.5 miles long and about one mile wide.

Hotel Accommodations

The Meeting headquarters will be at the Benjamin Franklin Hotel, rates for which are given below. Advance registration should be made direct with the hotel at as early a date as possible because a large convention of another organization will be held in Philadelphia during that same week.

RATES PER DAY—EUROPEAN PLAN

Single Rooms			Double Rooms	
With shower and bath	With bath	With shower bath and twin beds	With shower and bath	With bath
\$5.00	\$4.00	\$8.00	\$7.00	\$6.00
6.00		9.00	8.00	
7.00		10.00	9.00	
8.00				



GENERAL COMMITTEE

- E. C. Stone.....Chairman
Vice-President, Middle Eastern District, No. 2
- J. A. Cadwallader.....Secretary
Secretary, Middle Eastern District, No. 2
- L. F. Deming.....Vice-Chairman

LOCAL COMMITTEE

Entertainment Committee
H. C. Albrecht, *Chairman*

Committee on Inspection Trips
P. H. Chase, *Chairman*

Headquarters—Hotels and Publicity
L. J. Costa, *Chairman*

Finance Committee
E. C. Dew, *Chairman*

Students' Activities
C. D. Fawcett, *Chairman*

Committee on Registration and Arrangements
D. H. Kelly, *Chairman*

Meetings and Papers Committee
I. M. Stein, *Chairman*

Transportation Committee
G. I. Wright, *Chairman*

T. H. Clegg
J. V. B. Duer
I. C. Forshee
C. N. Johnson

J. L. MacBurney
E. E. Merriam
J. H. Tracy
E. B. Tuttle

Ladies' Committee
Mrs. P. H. Chase, *Chairman*

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