

American Institute of Electrical Engineers

1884  1931

SUMMER CONVENTION

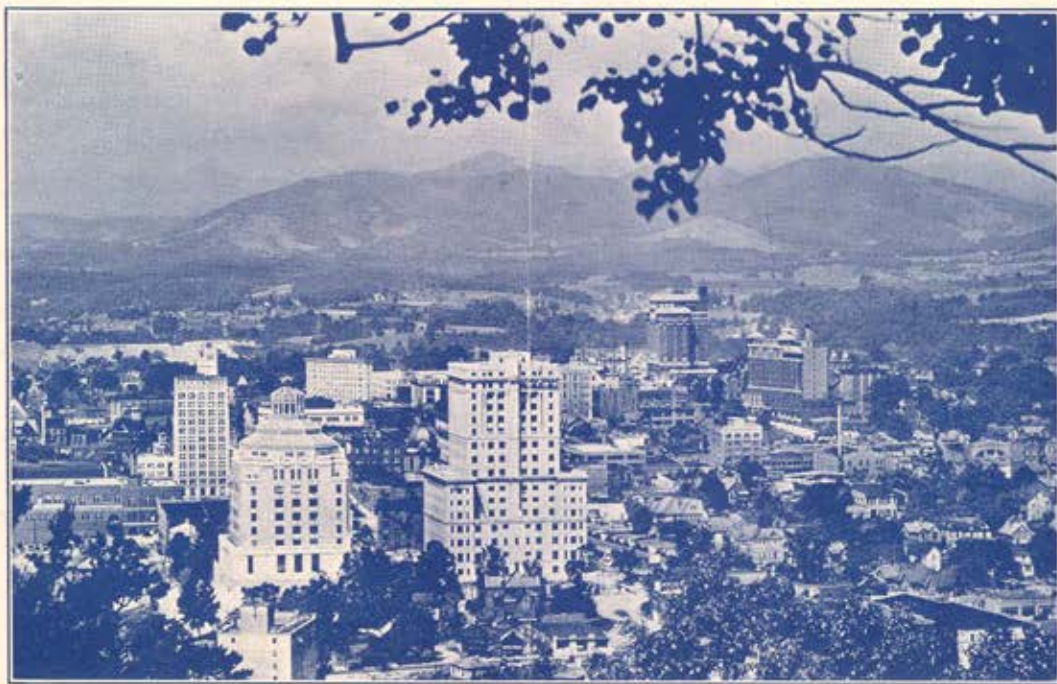
ASHEVILLE, N. C.

June 22-26

NINETEEN · THIRTY · ONE

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ASHVILLE in "The Land of the Sky" is an industrial, commercial and resort center in the Southern Appalachians, possessing unusual scenic beauty and in particular during the month of June when the mountain laurel and rhododendron will be in bloom. Excellent concrete highways lead from the city in all directions and wind their way over the mountain ranges to such points of scenic interest as Chimney Rock, Lake Lure, Mount Pisgah and the Pisgah National Forest and Game Reserve.



Picturesque View of Asheville

AMERICAN INSTITUTE of ELECTRICAL ENGINEERS
1931 Summer Convention

DIVERSIFIED PROGRAM WITH DELIGHTFUL RECREATION AMIDST SCENIC SPLENDORS OF THE SOUTH
PLANNED FOR THE CONVENTION AT
ASHEVILLE, N.C., JUNE 22-26



PROGRAM including technical sessions of broad scope and current interest, delightful entertainment, pleasant trips in a land of scenic splendor, and ample facilities for sports has been arranged by the General Convention Committee for the Summer Convention, which will be held in Asheville, N. C., June 22-26. Headquarters will be in the Grove Park Inn.

Technical Sessions

A selection of technical papers on subjects of recent interest should prove of particular attraction to public utility executives, operating engineers, designers of electrical machinery, and research workers. Symposiums comprise three of the sessions; one on the important subject of system interconnections; another on the extensive topic of communication systems for electric utilities; a third dealing with the history of electrical units, the volt, the ampere and the ohm. Papers describing the latest developments in the fields of power cables, automatic stations, electrical machinery and research will be presented in four other sessions. In addition the annual reports of



Grove Park Inn
Convention Headquarters

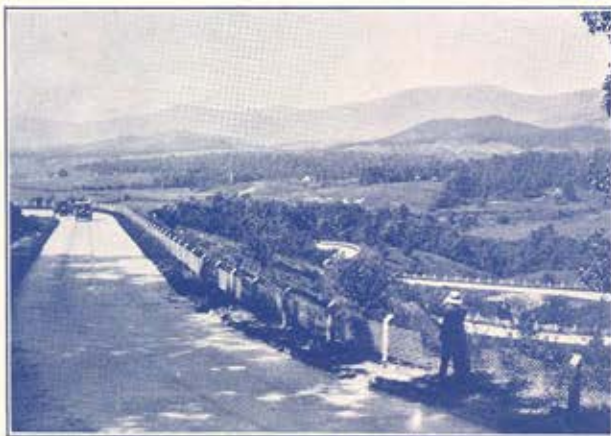
Technical Committees of the Institute reviewing the advances in theory and practise during the year will be presented by title at the session on Selected Subjects and Research.

Annual Business Meeting

The business side of the Convention will consist of the Annual Report of the Board of Directors, a report of the Committee of Tellers, concerning the ballots cast for the recent election of officers, the President's Address and the presentation of prizes for papers. The Lamme Medal, awarded several months ago, will be presented to Dr. William J. Foster, Schenectady, N. Y., "for his contributions to the design of rotating alternating-current machinery."

Another important feature of the convention will be the Conference of Officers, Delegates, and Members, which will be held at 2:00 p.m., Monday, June 22, and continued at the same hour on the following day.

On Wednesday a Directors' Luncheon and meeting will be held at the Grove Park Inn.



Highway Near Asheville

OUTLINE OF PROGRAM

(Eastern Standard Time throughout)

Monday, June 22

- 9:00 a.m. Registration
- 10:00 a.m. Annual Business Meeting of the Institute
Address of Welcome by the Mayor of Asheville
Annual Report of the Board of Directors (in Abstract), by F. L. HUTCHINSON, National Secretary
Report of Tellers Committee on Election of Officers;
Introduction of and response from President-Elect
Presentation of Prizes for Papers
Presidential Address, by W. S. LEE
Lamme Medal Presentation
- 2:00 p.m. Conference of Officers, Delegates, and Members
Qualifying Round for Mershon Trophy, at Biltmore Forest Country Club
Tennis at Asheville Country Club
- 2:30 p.m. Ladies' Drive about City followed by Tea at Mountain Meadows
- 9:00 p.m. President's Reception—dancing—at Grove Park Inn

Tuesday, June 23

- 9:00 a.m. Registration
- 9:30 a.m. Two Technical Sessions:
(a) Symposium on Communication Services for Electric Utilities;
(b) Electrical Machinery
- 1:00 p.m. Ladies' Luncheon and Bridge, at Biltmore Forest Country Club
- 2:00 p.m. Conference of Officers, Delegates, and Members (continued)
Sports as scheduled
- 7:00 p.m. Get-Together Dinner, at Grove Park Inn

Wednesday, June 24

- 9:30 a.m. Two Technical Sessions:
(c) Symposium on Interconnections;
(d) Symposium on Electrical Units
- 12:30 p.m. Directors' Luncheon and Meeting, at Grove Park Inn
- 2:00 p.m. Trip to Biltmore House and Estate
Sports as scheduled
- 7:00 p.m. Convention Banquet, at Grove Park Inn

Thursday, June 25

- 9:30 a.m. Two Technical Sessions:
(e) Automatic Stations;
(f) Cables
Semi-Finals in Golf and Tennis
- 2:00 p.m. Technical Session:
(g) Research and Selected Subjects, Technical Committee Reports
Finals in Golf and Tennis
- 2:30 p.m. Drive to Chimney Rock and Lake Lure Inn for Tea

Friday, June 26

- All-Day Excursions, choice of:
(1) Carolina Power and Light Company's Waterville Plant;
(2) Champion Fibre Company and American Enka Corp.;
(3) Mount Pisgah

LADIES' PROGRAM

Monday, June 22

- 10:00 a.m. Opening of Convention
President's Address, by W. S. LEE
- 2:30 p.m. Drive about City followed by Tea at Mountain Meadows
- 9:00 p.m. President's Reception—dancing—at Grove Park Inn

Tuesday, June 23

- 1:00 p.m. Ladies' Luncheon and Bridge at Biltmore Forest Country Club
- 7:00 p.m. Get-Together Dinner at Grove Park Inn

Wednesday, June 24

- 2:00 p.m. Trip to Biltmore House and Estate
- 7:00 p.m. Convention Banquet, at Grove Park Inn

Thursday, June 25

- 2:30 p.m. Drive to Chimney Rock and Lake Lure Inn for Tea

Friday, June 26

- All-Day Excursions, choice of trips as scheduled

TECHNICAL SESSIONS

Tuesday

9:30 a.m.—Parallel Sessions A and B

(A) Symposium on Communication Services for Electric Utilities

Communication Services of Electric Utilities

- E. C. BRIGGS
Ohio Bell Telephone Co.
- R. N. CONWELL
Public Service Electric & Gas Co.
- + C. F. CRAIG
American Telephone & Telegraph Co.
- G. M. KEENAN
Pennsylvania-New Jersey Interconnection

Communication in the Western Division of the Niagara Hudson System

- + E. S. BUNDY
Buffalo, Niagara & Eastern Power Corp.

Communication Facilities of a Metropolitan Power System

- + P. B. JUHNKE
Commonwealth Edison Co.

*Communication Services for the New England Power Association

- + C. A. BOOKER
New England Power Association
- M. E. CLARK
New England Telephone & Telegraph Co.

Communication on the Arkansas-Louisiana-Mississippi Interconnected System

- + E. C. STEWART
Arkansas Power & Light Co.

*These papers have not been received by the Publication Committee complete ready for printing up to the time of going to press, May 21.



Waterville Hydroelectric Development

(B) Electrical Machinery

Reestablishing Excitation of a Loaded Alternator in Parallel with Others

- D. D. HIGGINS and E. WILD
Commonwealth Edison Co.

Calculation of Synchronous Machine Constants

- + L. A. KILGORE
Westinghouse Electric & Mfg. Co.

*Determination of Synchronous Machine Constants by Test

- + S. H. WRIGHT
Westinghouse Electric & Mfg. Co.

Transient Oscillations in Distributed Circuits

- + L. V. BEWLEY
General Electric Co.

Field Transients in Magnetic Systems

- + ERNST WEBER
Polytechnic Institute of Brooklyn

Wednesday

9:30 a.m.—Parallel Sessions C and D

(C) Symposium on Interconnections

Interconnection Services—Their Classification and Evaluation

- + A. E. BAUMAN
Public Service Electric & Gas Co.

Interconnection—New England District

- + E. W. DILLARD and W. R. BELL
New England Power Engineering & Service Corp.

The Pennsylvania-Ohio-West Virginia Interconnection

- + H. S. FITCH
West Penn Power Co.

*Interconnection Development and Operation

- + G. M. KEENAN
Pennsylvania-New Jersey Interconnection

(D) Symposium on Electrical Units

*International Standard of Electromotive Force and Its Low-Temperature Coefficient Form

- + MARION EPPLEY
The Eppley Laboratory, Inc.

Design of Potentiometers

- + I. MELVILLE STEIN
Leeds & Northrup Co.

*Electrical Units and Their Application

- + L. T. ROBINSON
General Electric Co.

The Unit of Electrical Resistance; Past History and Impending Change

- + H. B. BROOKS
Bureau of Standards
Washington, D. C.

TECHNICAL SESSIONS

Thursday

9:30 a.m.—Parallel Sessions E and F

(E) Automatic Stations

- 19 An A-C Supervisory Control System
 O. K. MARTI
 American Brown Boveri Co.
- 20 Supervisory Control for A-C Electrified Railroads
 C. P. WEST
 Westinghouse Electric & Mfg. Co.
 H. C. GRIFFITH
 Pennsylvania Railroad Co.
- 21 Automatic Combustion Control
 C. H. SANDERSON and E. B. RICKETTS
 The New York Edison Co.
- 22 Operating Experience with Automatic Stations
 F. F. AMBUHL
 Toronto, Hydro-Electric System
 GARLAND STAMPER
 Columbia Engineering & Management Corp.
- 23 Three Years' Operating Experience—With Miniature Switchboard Supervisory Automatic Control
 R. M. STANLEY
 Byllesby Engineering & Management Corp.

(F) Cables

- 24 Economics of High-Voltage Cable
 D. W. ROPER
 Commonwealth Edison Co.
- 25 Characteristics of Oil-Filled Cable
 G. B. SHANKLIN and F. H. BULLER
 General Electric Co.
- 26 Oil-Filled Cable and Accessories
 R. W. ATKINSON and D. M. SIMMONS
 General Cable Corp.
- 27 Residual Air and Moisture in Impregnated-Paper Insulation—III
 J. B. WHITEHEAD and F. HAMBURGER, Jr.
 Johns Hopkins University
- 28 Insulation Variability—Its Influence in Determining Breakdown Voltages
 M. C. HOLMES
 West Virginia University

2:00 p.m.—Session G

(G) Research and Selected Subjects Technical Committee Reports

- 29 Extinction of Short A-C Arcs
 T. E. BROWNE, Jr.
 Westinghouse Electric & Mfg. Co.
- 30 *A Corona-Tube Voltage Regulator
 H. W. DODGE and C. H. WILLIS
 Princeton University

*The Application of the Cooperative Method of Instruction to Engineering Schools and Polytechnic Institutes

D. C. JACKSON, Jr.
 University of Kansas

Experimental Studies of Arcing Faults on a 75-Kv. Transmission System

J. R. EATON
 Consumers Power Co.
 J. K. PECK
 N. E. L. A.
 J. M. DUNHAM
 American Telephone & Telegraph Co.

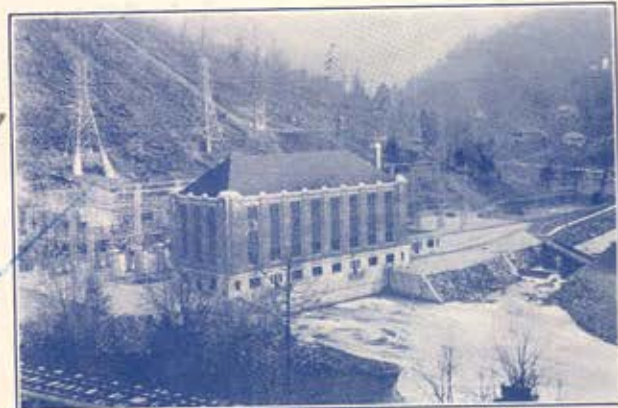
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Technical Committee Reports

These Reports will be presented by title only and they may be discussed during this session.

AUTOMATIC STATIONS	F. Zogbaum, Chairman
COMMUNICATION	G. A. Kositzky, Chairman
EDUCATION	W. R. Work, Chairman
ELECTRICAL MACHINERY	P. L. Alger, Chairman
ELECTRIC WELDING	P. P. Alexander, Chairman
ELECTROCHEMISTRY AND ELECTROMETALLURGY	
	P. H. Brace, Chairman
ELECTROPHYSICS	O. E. Buckley, Chairman
GENERAL POWER APPLICATIONS	C. W. Drake, Chairman
INSTRUMENTS AND MEASUREMENTS	E. J. Rotan, Chairman
IRON AND STEEL PRODUCTION	A. C. Cummins, Chairman
PRODUCTION AND APPLICATION OF LIGHT	G. S. Merrill, Chairman
APPLICATIONS TO MARINE WORK	R. A. Beckman, Chairman
APPLICATIONS TO MINING WORK	Carl Lee, Chairman
POWER GENERATION	F. A. Allner, Chairman
POWER TRANSMISSION AND DISTRIBUTION	P. H. Chase, Chairman
PROTECTIVE DEVICES	Raymond Bailey, Chairman
RESEARCH	L. W. Chubb, Chairman
TRANSPORTATION	Sidney Withington, Chairman



Waterville Plant of the Carolina Power and Light Co.

ENTERTAINMENT

On Monday evening, June 22, the President's Reception, followed by dancing, will be held at the Grove Park Inn.

On Tuesday evening an informal Get-Together Dinner, followed by dancing, will be held at the Grove Park Inn. Attractive entertainment features will be provided at this dinner.

The Convention Banquet will be held at the Grove Park Inn, Wednesday evening, June 24, and will also be followed by dancing.

It is hoped that all in attendance at the Convention will take advantage of these social functions and the opportunities which they offer to form new acquaintances and renew old acquaintanceships.

LADIES—Besides the foregoing social events an active Ladies' Committee has arranged attractive trips each day for the visiting ladies. Asheville long has been noted for its wonderful climate and the natural beauty of the surrounding country. In conjunction with the trips there will be teas, luncheons and bridge at noted resorts.

Furthermore the facilities of the Biltmore Forest and Asheville Country Clubs will be at the disposal of those attending.

GOLF

The main event for golfers will be the annual tournament for the Mershon Trophy, which will be played over the course of the Biltmore Forest Country Club. This club is located about three miles from the center of Asheville in the heart of the Biltmore Forest development. It has an 18-hole course with very excellent greens well laid out and kept in excellent order. It is surrounded by beautiful homes and from almost every point there is a wonderful view of the distant and nearby mountains.

It is essential that the qualifying round of the Mershon Trophy tournament be completed on Monday. This will mean that guests arriving after Monday will be unable to enter the Mershon Cup competition.

The competition will consist of qualification round (handicap medal play) of eighteen holes, followed by match play (handicap).

The sixteen low net scores will qualify for the match play rounds, which will be played on Tuesday p.m., Wednesday p.m., and Thursday, a.m. and p.m.

Arrangements will be made by the Committee so that officers, section delegates, et. al., may play their qualification rounds at any particular time on Monday, so as to avoid missing their scheduled meetings.

No greens fees will be charged members or registered guests for any play during the Convention, and transportation to and from all courses will be provided.

TENNIS

The annual Mershon Trophy competition in Men's Singles will be played, together with Men's Doubles, and if sufficient entries can be secured, Ladies' Singles and Mixed Doubles will also be arranged.

The courts on which these events will be played will be announced later, but tennis players can be assured that excellent courts (probably clay) will be available for all who wish to use them.

Entries for all these events should be in the hands of the Committee not later than Monday afternoon.

TRIPS

Friday, June 26, will be devoted to an all-day excursion with a choice of one of the following trips: Carolina Power and Light Company, Waterville plant; Champion Fibre Company and American Enka Corp.; Mount Pisgah.

Waterville Plant

The Waterville plant of the Carolina Power and Light Company is situated on the Big Pigeon River close to the Tennessee state line. Twelve miles upstream a concrete arch dam, 200 ft. high and about 700 ft. long at the top, forms a reservoir from which water is conducted to the plant through a concrete-lined tunnel approximately 33,000 ft. in length. Construction is in two sections known as the upper and lower levels, connected by a vertical circular section known as the gap shaft. The power house contains three 45,000-kva., 13.8-kv., 400-r.p.m. vertical generator units each directly connected to a 55,000-hp. Francis type waterwheel. The unit system is employed and each generator is connected directly to the step-up bank of transformers without low-voltage oil circuit breakers.

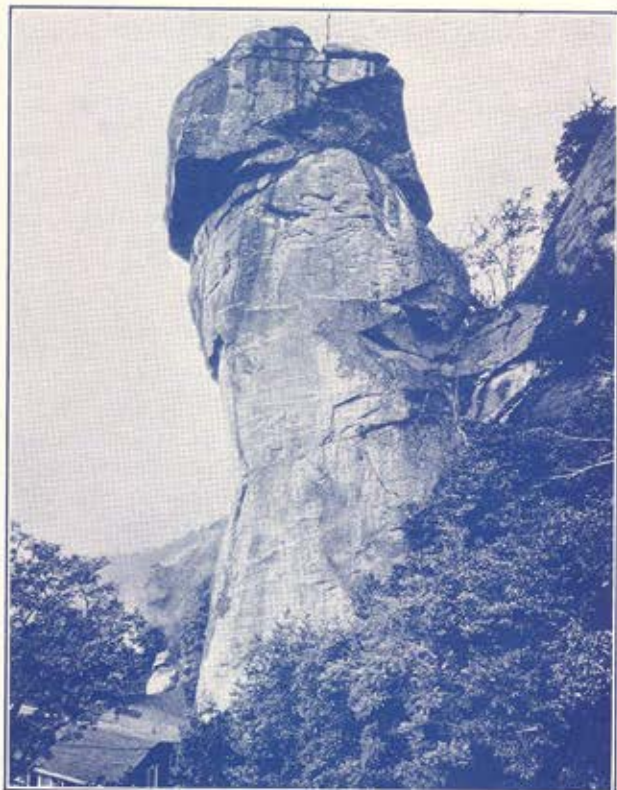
Through the Waterville high-voltage bus an interconnection is formed which establishes a complete connection between the Great Lakes and the Gulf of Mexico. Transmission lines interconnect with the Appalachian Electric Power Company to the North, the Tennessee Electric Power Company to the West, and the Duke Power Company to the South, as well as supplying the Carolina Power and Light Company's load in western North Carolina.

Champion Fibre Company

The large Canton, N. C., plant of the Champion Fibre Company is unique in the history of industrial development in that it serves the paper industry as well as the tanning industry. When chestnut wood is employed as the raw material to produce soda pulp the tannin must first be extracted. The tannin extract unit for this purpose has a capacity of 500 barrels of liquid extract per day. Sulphate pulp is produced in large quantities from the hemlock and spruce. Another mill produces high-grade book, bond, tablet, and envelope papers and has a daily capacity of 100 tons. Chlorine used for the bleaching of pulp is produced by an electrolytic plant having a capacity of 70 tons daily. The chief by-products of this industry consist of highly volatile methyl compounds, turpentine, and sodium resinates, obtained from the cooking of pine wood for sulphate pulp.



Asheville Country Club Course



Chimney Rock near Asheville

The American Enka Corporation

The American Enka Corporation, the only Rayon plant in North Carolina, is an industrial enterprise of recent date. Inspection will be confined to the power plant and village only. The production units will not be open for inspection.

Enka is located about eight miles southwest of Asheville, on State Highway No. 10 between West Asheville and Canton. It is surrounded by the majestic mountains forming the southern extremity of the Appalachian Range, and is considered one of the beauty spots of Western North Carolina. The clean, modern aspect and well finished surroundings of the mill structures and those of the village fit harmoniously in the grandeur of nature's panorama.

A water storage and settling basin has been constructed in the form of a picturesque artificial lake, with a capacity of 300,000,000 gallons. Nearby three villages have been created for officials, supervisory employees and laborers, at the beautiful border of the lake and set in the green wealth of foliage of woods and bushes, as provided by nature. All houses are of the latest design and thoroughly modern in every way.

The capacity of the mill is around 20,000 pounds of viscose yarn per day, with a length of about 75,000 miles, and the factory buildings cover 25 acres of ground.

The power plant consists of two Allis Chalmers turbine generators, each of 2200-kw. capacity, supplied by steam from the boiler house equipped with four Babcock & Wilcox boilers of 507 H. P. each and fired by Riley stokers.

Mount Pisgah

This mountain with an altitude of 5,749 ft. is the principal high point in the Pisgah National Forest and Game Preserve. Its summit affords a panorama view of Buncombe, Transylvania, Henderson, and Haywood counties, overlooking Little Bald, Big Bald, Cold Mountain, and Eagles Nest. The beautiful mountain laurel and rhododendron also will be in bloom during June. This excursion consists of approximately a 60-mile round trip. De-

lightful meals and hotel accommodations may be secured at the famous Pisgah Forest Inn, near the top of the mountain.

Biltmore House and Estate

Because of its magnitude, exquisite architecture, remarkable grounds, gardens and priceless collection of paintings, antiques, and other objects of art, the Biltmore Estate is unique among American country establishments. The house is considered to be the finest private house in America. Approximately 15,000 acres of landscaped park, formal gardens, forest and farm lands of the estate surround the mansion which is now a memorial to George W. Vanderbilt, the founder.

Chimney Rock

Little need be said about this natural phenomenon, which is one of the most famous scenic splendors of the South. Chimney Rock poised on a mountain slope overlooks the blue surface of Lake Lure and affords one an advantageous point from which to view the mountain panorama. Tea will be served at the Lake Lure Inn on this trip.

Hydroelectric Development Columbia, S. C.

Arrangements are being made to include an additional trip on Saturday, June 27, to this development providing a sufficient number of members are interested.

Invitations have been cordially extended by the State of South Carolina, the City of Columbia, and the Lexington Water Power Company to visit that state, its capital, and the large 200,000 hp. hydroelectric development on the Saluda River near Columbia.

The Lexington Water Power Company has offered to arrange for transportation from the railroad station to and from the dam where a barbecue will be given. Negotiations are pending with railway officials to run a special train from Asheville to Columbia at a reduced rate of fare.

HOTELS

Reservations for hotel accommodations should be made by writing directly to the hotel preferred. Rates for rooms with bath are:

Hotel	Plan	Single	Double (per person)	No. of Guests
Grove Park.....	A	\$12.00	\$10.00	400
George Vanderbilt.....	E	3.00	2.50	400
Battery Park.....	E	3.50	3.00	400
The Manor.....	A	9.00	8.00	100

All hotels are within ten minutes' easy driving of the convention headquarters hotel.

RAILROAD RATES

It has been ascertained that in nearly all cases the summer tourist rates are lower than those offered by the convention certificate plan. On this account certificate rates are not being arranged and members are advised to purchase Summer Tourist tickets to Asheville, N. C.

REGISTER IN ADVANCE

Each member should register in advance by using the enclosed post card, thus permitting the committee in charge to prepare badges in advance of your arrival at the convention. This will result in the saving of considerable time and congestion at the Registration Desk.

F. L. HUTCHINSON,
National Secretary

General Convention Committee



E. P. Coles	Chairman
C. E. Waddell	Honorary Chairman
W. S. Rodman	Vice-President
M. E. Lake	Secretary-Treasurer
R. R. Laxton	Assistant Secretary-Treasurer
A. E. Knowlton	Meetings and Papers
E. S. Lee	Sections
W. E. Mitchell	Finance
C. E. Waddell	Entertainment
J. E. Serrine	Sports
F. L. Moser	Transportation and Trips
W. S. Lee, Jr.	Hotels and Registration
T. F. Ball	Publicity
Mrs. F. Q. Boyer	Ladies

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