

American Institute of Electrical Engineers



# WINTER CONVENTION

to be held at the

Engineering Societies Building  
33 West 39th Street  
New York

January 26-30, 1931



*Skyline Looking North—the New Empire State Building on the left  
and the Chrysler Spire right of center*

# THE 1931 WINTER CONVENTION

Engineering Papers, Trips, and Entertainment of striking interest comprise excellent program



ANY EXCELLENT DEVELOPMENTS in various fields of electrical engineering will be brought out in the technical sessions at the A.I.E.E. Winter Convention. This meeting, which promises to equal in interest any of the past Winter Conventions, will be held with headquarters in the Engineering Societies Building, New York, January 26-30.

In addition to the excellent technical program there will be a number of interesting trips and good entertainment with a specially arranged program for the ladies.

## Technical Sessions

During one of the technical sessions *President* William S. Lee will deliver an address, "The Engineer's Duty to Himself and to the Public."

One of the sessions that should prove of outstanding interest is the Symposium on Coordination between Power and Communication Circuits. The papers which are to be presented represent the work of the Joint General Committee of the National Electric Light Association and the Bell Telephone System. Each paper was jointly prepared by a representative in the power field and a representative in the communication field. The achievements obtained are a noteworthy example of cooperation between different fields of the electrical profession.

At the opening of the session Mr. R. F. Pack, Vice-President and General Manager of the Northern States Power Company, will make an introductory statement.

Following the presentation of the papers, closing remarks will be made by Mr. Bancroft Gherardi, Vice-President and Chief Engineer of the American Telephone and Telegraph Company. The session should have a broad general appeal and the papers which are to be presented are not highly technical or mathematical.

Many recent developments involving design, theory, operation and testing will be brought out in the papers which will be presented in nine other sessions in the fields of telegraphy, transportation, protective devices, power transmission, industrial power applications, electric welding, electrical machinery, and research.

A list of the individual papers to be presented is given elsewhere in this announcement.

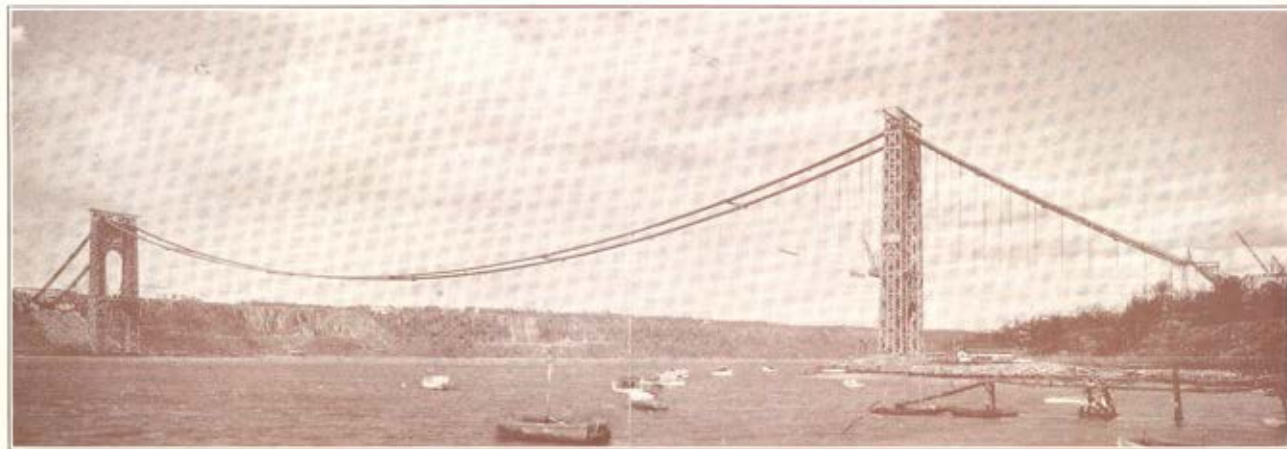
## Edison Medal Presentation

The Edison Medal will be presented to Dr. Frank Conrad for his contributions to radio broadcasting and short wave radio transmission. Presentation will take place in the Engineering Auditorium on the evening of Wednesday, January 28.

Following the Medal presentation ceremonies a lecture will be given by Dr. Karl Taylor Compton, President of Massachusetts Institute of Technology.

## Smoker

A buffet dinner and smoker will be held on Tuesday evening, January 27 in the Engineering Societies Building. The Smoker affords a splendid opportunity for mem-



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8:15 p.m.

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## The 1931 Winter Convention of the A. I. E. E.

### P R O G R A M

#### Monday, January 26

- 10:00 a.m. Registration  
2:00 p.m. Opening of Convention  
A—Symposium on Telegraphy  
8:15 p.m. B—Joint Session of Committee on Transportation and the Transportation Group of the New York Section

#### Tuesday, January 27

- 10:00 a.m. C—Symposium on Coordination of Power and Telephone Plant  
2:00 p.m. D—Session on Protective Devices  
6:00 p.m. Buffet Dinner and Smoker

#### Wednesday, January 28

- 10:00 a.m. E—Session on Power Transmission  
2:00 p.m. Inspection Trips  
Board of Directors Meeting  
8:30 p.m. Edison Medal Presentation and Lecture

#### Thursday, January 29

- 10:00 a.m. F—Industrial Power Applications  
2:00 p.m. Technical Sessions G and H  
G—Transportation  
H—Electric Welding  
7:30 p.m. Dinner Dance

#### Friday, January 30

- 10:00 a.m. I—Session on Research  
2:00 p.m. J—Session on Electrical Machinery

Members and their guests to renew old acquaintances. Plans are being made which will provide very attractive entertainment following the dinner to be served by Louis Sherry. Tickets will be \$3.00 per person.

#### Dinner Dance

The Dinner Dance of the Winter Convention will be held in the Grand Ballroom of the Hotel Astor on the evening of Thursday, January 29. For many years this annual social event of the Institute has afforded much pleasure to all who were in attendance and is looked forward to from year to year by a large proportion of the membership. Tickets will be \$6.00 per person. Reservations may be made in advance for tables seating eight people.

#### Reduced Railroad Rates

Reduced railroad rates will be available under the certificate plan to members and guests who attend the

Convention. Under this plan only half fare need be paid on the return trip over the same route, provided 150 certificates are deposited by members at the registration desk. The rates apply to all who attend the convention and to dependent members of their families. Each member or guest should obtain a certificate when purchasing his one-way ticket to New York. He should explain to the ticket agent that he wishes the certificate authorized by the passenger associations for the Winter Convention of the American Institute of Electrical Engineers.

On arriving at the convention the certificate should be deposited at the Registration Desk. Here it will be held for validation by a railroad representative and, if 150 certificates are validated, the validated certificates will later be returned to the owners. By presenting the validated certificate when purchasing a return ticket, only half fare will be charged. Local ticket agents should be consulted regarding conditions affecting this plan, as it applies only within certain dates depending upon the territory. *Everyone* whose one-way fare is over 66 cents should get a certificate whether or not he intends to use it. By neglecting to do so, he may deprive others of considerable saving.

#### Ladies Entertainment

The Ladies Entertainment Committee has been actively engaged preparing plans for a special program which will prove very attractive for the ladies in attendance.

#### 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.

#### Committees

The 1931 Winter Convention Committee is as follows: H. P. Charlesworth, Chairman; J. B. Bassett, C. R. Jones, H. A. Kidder, G. L. Knight, A. E. Knowlton, E. B. Meyer, C. E. Stephens and R. H. Tapscott.

The chairmen of the subcommittees are, respectively: J. B. Bassett, Convention Executive Committee; W. R. Smith, Inspection Trips; E. J. Johnson, Dinner Dance; G. W. E. Draper, Smoker; and Mrs. E. B. Meyer, Ladies Entertainment.

# The 1931 Winter Convention of the A. I. E. E.

## Trips

The Inspection Trips Committee has tentatively scheduled a number of interesting trips on Wednesday afternoon, January 28. Other attractive trips have been tentatively scheduled daily. However, those in attendance at the convention, who have anything of special interest in mind that they would like to see should make their desires known to the committee which will in turn endeavor to make all necessary arrangements.

The number of tickets will be limited and all who wish to take trips should register and get tickets as early as possible. Tickets must be secured not later than 4:00 p.m. on the afternoon preceding the day on which the trips are to be taken. They may be obtained at the convention or reservations may be made by mail.

Trips which have been tentatively scheduled for the afternoon of Wednesday, January 28, are as follows:

### Hudson River Bridge

This project with construction work now in progress offers an unusual opportunity for engineers to view a remarkable feat in bridge construction. The main span, 3500 feet in length, is the longest single span in the world and is supported between towers which rise to a height of 635 ft. above the water's surface. Four cables each made up with 26,474 wires giving a specified minimum strength of 220,000 lbs. per sq. in. and weighing 28,450 tons support the double deck structure.

### Roseland Switching Station of the Public Service Electric and Gas Company

This station is the point of interconnection at 220 Kv. of the system of this New Jersey utility with those of the Pennsylvania Power and Light Company and of the Philadelphia Electric Company. Of interest are the 30,000-Kv-a. transformer units, these being among the largest single-phase transformers ever built, the 20,000 Kv-a. synchronous condenser, and the ground supported high-voltage busses.

### The Delaware, Lackawanna and Western Railroad Electrification

This system employs 3,000 volts direct current supplied by rectifiers in sizes up to 3,000 kw. nominal rating. Each motor car is equipped with four motors, designed to operate in pairs in series across the 3,000-volt supply.

The present contemplated extent of the electrification embraces seventy (70) route miles with a total of approximately one hundred and sixty (160) track miles.

### Ford Motor Plant

Empire State Building with Vertical Distribution

Fokker Airplane Factory

Sperry Gyroscope Company

The following daily inspection trips are tentatively scheduled:

Westinghouse Lighting Institute

Chrysler Building and Vertical Distribution

Network switch exhibit

Lithographing plant of National Process Company

Electrical Testing Laboratories

East River Generating Station of New York Edison Company

Arrangements can be made to see the new 160,000-Kv-a. Tandem Compound Unit in the East River Generating Station, as well as many of the other power stations or sub-stations of the neighboring utilities.

Trips to the following points of interest are now under consideration and probably will be scheduled at a later date.

New Eighth Avenue Subway Substation.

160,000-Kva. Tandem Compound Unit of the Brooklyn Edison Company.

Modern press installation and lighting of the new Daily News Building.

Modern use of light as the sole decorative agent in a large ball-room—St. George Hotel, Brooklyn, N. Y.

## Hotel Reservations

Reservations for hotel accommodations should be made by writing directly to the hotel of your preference.

## Hotel Rates

HOTEL	Without Private Bath		With Private Bath	
	Single Room	Double Room	Single Room	Double Room
✓ Ambassador 51st St. & Park Ave.	.....	.....	\$6.00	\$8.00
✓ Astor 44th & Broadway	\$5.00	\$5.50	\$4.00	\$6.00
✓ Biltmore 43rd St. & Madison Ave.	.....	.....	\$8.00	\$10.00
✓ Breslin 1186 Broadway	\$1.50	\$3.00	\$6.00	\$10.00
✓ Bristol 129 W. 48th St.	\$2.00	\$3.50	\$4.00	up
✓ Collingwood 45 W. 35th St.	\$2.00	\$3.00	\$2.50	\$3.50
✓ Commodore 42nd & Lexington Ave.	\$3.00	\$4.00	\$4.00	\$6.00
✓ Governor Clinton 31st & 7th Ave.	\$2.50	\$4.00	\$3.50	\$5.00
✓ Great Northern 109-121 W. 56th St.	\$3.00	\$5.00	\$5.00	\$7.00
✓ Knickerbocker 45th St. near Broadway	\$4.00	\$8.00	\$5.00	\$10.00
✓ Latham 29th St. & 3th Ave.	\$5.00	.....	\$6.00	.....
✓ Manger 50th St. & Broadway	.....	.....	\$3.00	\$5.00
✓ McAlpin 34th St. & Broadway	\$3.00	\$4.50	\$5.50	\$7.50
✓ Murray Hill 40th St. & Park Ave.	\$2.50	\$4.00	\$3.50	\$5.00
✓ Pennsylvania 52nd St. & 7th Ave.	\$5.00	\$7.00	\$7.00	\$9.00
✓ Plaza 59th St. & 3th Ave.	.....	.....	\$4.00	\$6.00
✓ Prince George 14 E. 28th St.	.....	.....	\$8.00	\$11.00
✓ Savoy-Plaza 49th St. & 5th Ave.	.....	.....	\$3.00	\$4.00
✓ Shelton 49th St. & Lexington	\$3.00	.....	\$4.00	\$7.00
✓ Vanderbilt 34th St. & Park Ave.	\$3.50	.....	\$1.00	\$7.00
✓ Wellington 56th St. & 7th Ave.	.....	.....	\$5.00	\$8.00
✓ Wolcott 31st St. & 5th Ave.	\$2.00	\$3.00	.....	.....
✓ Woodstock 127 W. 43rd St.	\$2.00	\$3.00	\$2.50	\$3.50
✓ Woodward 55th St. & Broadway	up	.....	\$4.00	\$6.00
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January 26—  
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# TECHNICAL SESSIONS

January 26—2:00 p.m.

Opening of Convention

H. P. CHARLESWORTH, *Vice-President*

*Chairman, Winter Convention Committee*

Welcome by President WILLIAM S. LEE

Statement by A. E. KNOWLTON

*Chairman, Meetings and Papers Committee*

## A—Symposium on Telegraphy

*Presiding Officer: H. S. OSBORNE*

*Vice-Chairman of Committee on Communication*

The Newfoundland Azores High-Speed Duplex Cable

J. W. MILNOR, C. H. CRAMER, W. D. CANNON

AND J. A. RANDALL

*Western Union Telegraph Co.*

Submarine Cable Telegraphy: Influence of Interference

J. W. MILNOR

*Western Union Telegraph Co.*

Telegraph Transmission Testing Machines

F. B. BRAMHALL

*Western Union Telegraph Co.*

A Printing Telegraph Concentrator

W. B. BLANTON

*Western Union Telegraph Co.*

Modern Practises in Private Wire Telegraph Service

R. E. PIERCE

*American Telephone and Telegraph Co.*

January 26—8:15 p.m.

## B—Joint Session of Committee on Transportation and the Transportation Group of the New York Section

January 27—10:00 a.m.

## C—Symposium on Coordination of Power and Telephone Plant

*Presiding Officer: A. E. KNOWLTON*

*Chairman, Meetings and Papers Committee*

Introductory Statement by R. F. PACK

*Vice-President and General Manager of the Northern States Power Company*

Trends in Telephone and Power Practise as Affecting Coordination

W. H. HARRISON

*American Telephone and Telegraph Co.*

A. E. SILVER

*Electric Bond and Share Co.*

Status of Joint Development and Research on Noise Frequency Induction

O. B. BLACKWELL

*American Telephone and Telegraph Co.*

H. L. WILLS

*Georgia Power Co.*

Status of Joint Development and Research on Low-Frequency Induction

R. N. CONWELL

*Public Service Electric & Gas Co.*

H. S. WARREN

*American Telephone and Telegraph Co.*

Status of Cooperative Work on Joint Use of Poles

J. C. MARTIN

*Midwest Utilities Co.*

H. L. HUBER

*American Telephone and Telegraph Co.*

Closing Statement by BANCROFT GHERARDI

*Vice-President and Chief Engineer, American Telephone and Telegraph Co.*

January 27—2:00 p.m.

## D—Session on Protective Devices

*Presiding Officer: RAYMOND BAILEY*

*Chairman of Committee on Protective Devices*

An Experimental Lightning Protector for Insulators

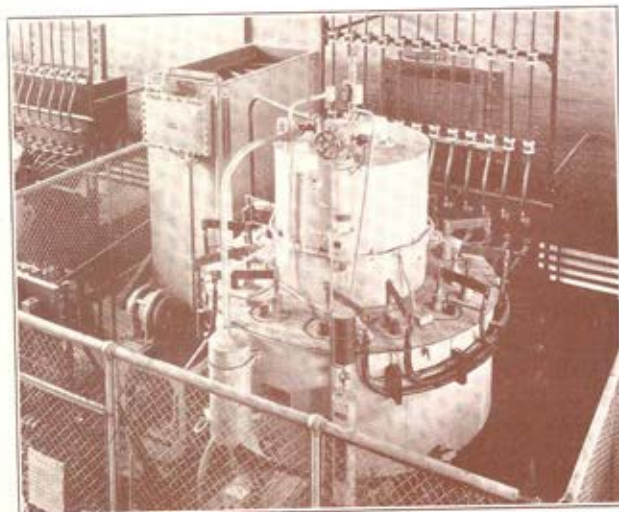
J. J. TOROK

*Westinghouse Electric & Mfg. Co.*

Field Tests on Thyrite Lightning Arresters Using Artificial Lightning of 1,500,000 Volts

K. B. McEACHRON AND E. J. WADE

*General Electric Co.*



Rectifier—3000 volts, 3000 kw.,  
Nominal Rating—one of four units  
at Roseville Ave. Station

now under  
at a later

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Daily News

a large ball-

should be  
preference.

With  
Private Bath

Single Room	Double Room
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## TECHNICAL SESSIONS—Continued

### Series Resistance Method of Increasing Transient Stability Limit

R. C. BERGVALL  
Westinghouse Electric & Mfg. Co.

### Trend in Development of Modern Circuit Interrupters

J. B. MACNEILL  
Westinghouse Electric & Mfg. Co.

### Philo 1930 Oil Circuit Breaker Tests; Aims, Set-up and Results from a System and Operating Point of View

PHILIP SPORN AND H. P. ST. CLAIR  
American Gas and Electric Co.

### The Oil-Blast Circuit Breaker

D. C. PRINCE AND W. F. SKEATS  
General Electric Co.

### Field Tests on Standard and Oil Blast Explosion Chamber Oil Circuit Breakers

R. M. SPURCK AND H. E. STRANG  
General Electric Co.

January 28—10:00 a.m.

### E—Session on Power Transmission

*Presiding Officer:* P. H. CHASE  
Chairman of Committee on Power Transmission and Distribution

### Traveling Waves on Transmission Systems

L. V. BEWLEY  
General Electric Co.

### Impulse Tests on Substations

A. S. BROOKES AND R. N. SOUTHGATE  
Public Service Electric and Gas Co.  
W. G. ROMAN AND E. R. WHITEHEAD  
Westinghouse Electric & Mfg. Co.



D. L. & W. R. R. Electrification—Catenary Construction

### Lightning Investigation on a Wood Pole Transmission Line

J. J. TOROK  
Westinghouse Electric & Mfg. Co.  
R. R. PITTMAN  
Arkansas Power and Light Co.

### 1929 Lightning Experiences on the 132-Kv. Transmission Lines of the American Gas and Electric Company

PHILIP SPORN  
American Gas and Electric Co.

### Attenuation and Successive Reflections of Traveling Waves

JAMES C. DOWELL  
General Electric Co.

January 29—10:00 a.m.

### F—Session on Industrial Power Applications

*Presiding Officer:* C. W. DRAKE  
Chairman of Committee on General Power Applications

### Electron Tubes in Industry

W. R. KING  
General Electric Co.

### Automatic Regulators in Industry

J. H. ASHBAUGH  
Westinghouse Electric & Mfg. Co.

### Electrical Distribution Systems for Industrial Plants

W. J. McCLAIN  
Louis T. Klauder, Consulting Engineer

### The Synchronous Motor with Phase-Connected Damper Winding As a Drive for High-Torque Loads

M. A. HYDE, JR.  
Westinghouse Electric & Mfg. Co.

### The Design and Application of Synchronous Motors to Meet Special Requirements

D. W. McLENNAN AND A. G. FERRISS  
General Electric Co.

### Weather Making—A Public Service and a New User of Power

D. C. LINDSAY  
Carrier Engineering Corp.

January 29—2:00 p.m.

### G—Session on Transportation

*Presiding Officer:* SIDNEY WITHINGTON  
Chairman of Committee on Transportation

### Lackawanna Suburban Electrification

E. L. MORELAND  
Jackson and Moreland, Engineers

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## TECHNICAL SESSIONS—Continued

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### Motive Power for Suburban Electrification

CHARLES KERR, JR.  
Westinghouse Electric & Mfg. Co.

### Transverse Fissure Detector Car

H. C. DRAKE  
Sperry Products, Inc.

### Inclined Catenary Calculations

B. M. PICKENS  
Westinghouse Electric & Mfg. Co.

### Design of Catenary System for Cleveland Union Terminal

N. F. CLEMENT AND E. E. RICHARDS  
Cleveland Union Terminals Co.

January 29—2:00 p.m.

### H—Session on Electric Welding

*Presiding Officer:* P. P. ALEXANDER  
*Chairman of Committee on Electric Welding*

### Some Experiments with Arcs between Metal Electrodes

G. M. SHRUM AND H. G. WIEST, JR.  
General Electric Co.

### An Improved Arc Welding Generator

J. H. BLANKENBUEHLER  
Westinghouse Electric & Mfg. Co.

### The Neutralized Welder, a Means of Controlling Transients

F. CREEDY  
Lehigh University

### A System for Direct-Current Arc Welding

S. R. BERGMAN  
General Electric Co.

### Resistance Welding of Motor Frames

MALCOLM THOMSON  
General Electric Co.

### Electric Resistance Brazing

SAMUEL MARTIN, JR.  
General Electric Co.

January 30—10:00 a.m.

### I—Session on Research

*Presiding Officer:* L. W. CHUBB  
*Chairman of Committee on Research*

### Some Electrical Characteristics of Cable Oils

H. H. RACE  
General Electric Co.

### The Conductivity of Insulating Oils—II

J. B. WHITEHEAD  
Johns Hopkins University

### Fundamental Properties of Impregnated Paper

J. B. WHITEHEAD AND W. B. KOUWENHOVEN  
Johns Hopkins University

### Traffic Control by Light Beams

R. C. HITCHCOCK  
Westinghouse Electric & Mfg. Co.

### Commutation and Current Collection in Hydrogen

R. M. BAKER  
Westinghouse Electric & Mfg. Co.

### The Helical Groove

G. M. LITTLE  
Westinghouse Electric & Mfg. Co.

### Studies in Non-Linear Circuits

C. G. SUITS  
General Electric Co.

January 30—2:00 p.m.

### J—Session on Electrical Machinery

*Presiding Officer:* P. L. ALGER  
*Chairman of Committee on Electrical Machinery*

### Mercury-Arc Rectifier Research

A. W. HULL AND H. D. BROWN  
General Electric Co.

### Effect of Transient Voltages on Power Transformer Design—III

K. K. PALUEFF  
General Electric Co.

### Stationary Flow of Heat in Large Turbine Generators

C. RICHARD SODERBERG  
Westinghouse Electric & Mfg. Co.

### Induction-Motor Slot Combinations

GABRIEL KRON  
United Research Corp.

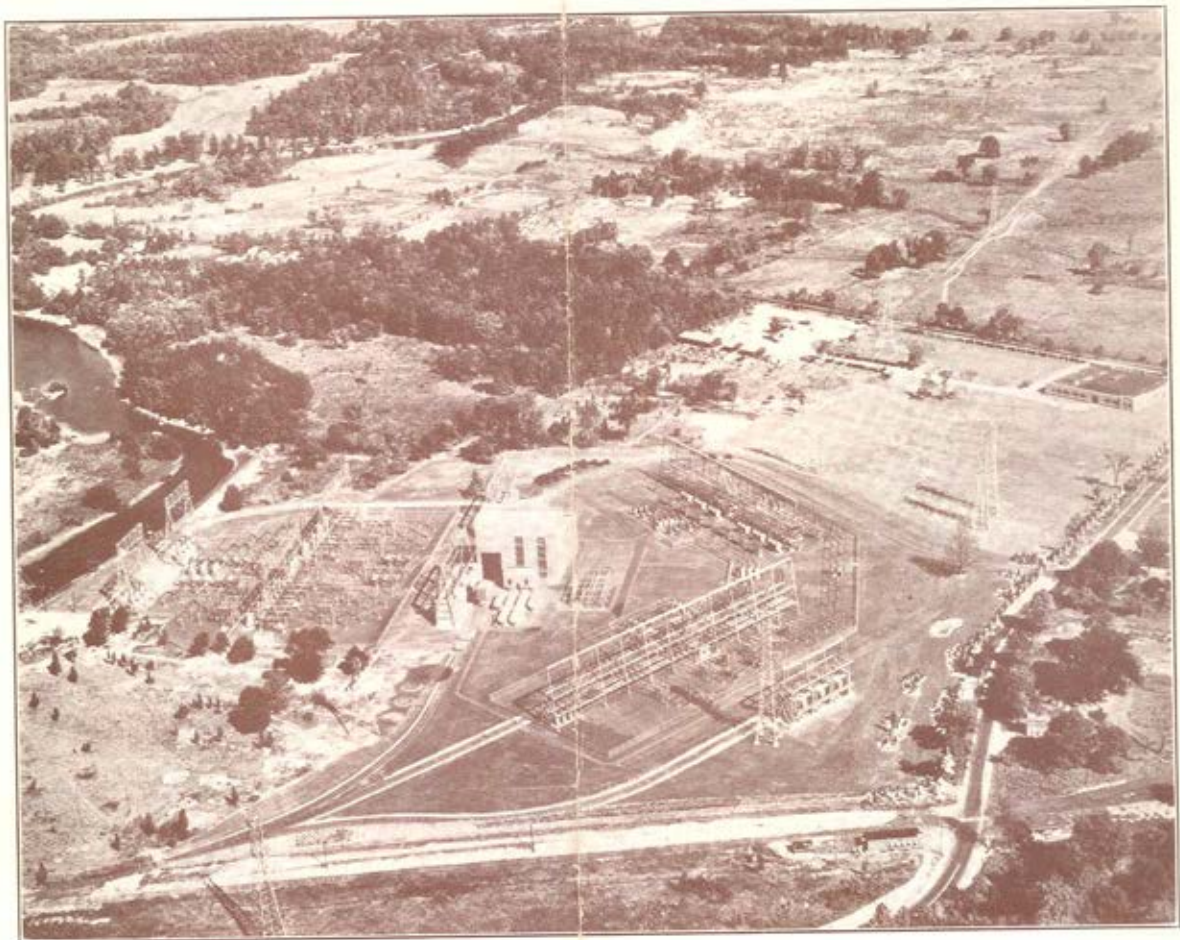
### The Pulling into Step of a Salient-Pole Synchronous Motor

H. E. EDGERTON AND PAUL FOURMARIER  
Massachusetts Institute of Technology

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## Cornell Engineers Dinner

The Cornell Society of Engineers will sponsor an informal Cornell dinner, which will be held on Friday, January 30, 1931. Members of the faculty and prominent alumni will be present. Please notify Mr. E. C. M. Stahl, Secretary and Treasurer, 380 Pearl Street, Brooklyn, N. Y., of your intention to be present.



Roseland Switching Station of Public Service Elec. & Gas Co.  
(Photo by Fairchild Aerial Surveys Inc.)

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