

# American Institute of Electrical Engineers

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1931

## SOUTH WEST DISTRICT MEETING

KANSAS CITY

MISSOURI

October 22-24, 1931

at the Kansas City Athletic Club



*Liberty Memorial—Kansas City, Missouri*

# A. I. E. E.—South West District Meeting

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G. Forbes	C. W. Mier
James Harrison	J. S. Waters

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# South West District Meeting

Kansas City, Mo., Oct. 22-24, 1931

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**T**HE South West District of the A.I.E.E. will hold a three-day meeting at Kansas City, Mo., October 22-24, with headquarters at the Kansas City Athletic Club. The local committee has arranged an attractive program which consists of four technical sessions, interesting inspection trips, a banquet and special entertainment for the visiting ladies.

## Technical Sessions

Four technical sessions will be held, two of which embrace many live subjects in the field of transmission and distribution. A third session will describe the St. Louis-Bagnell Interconnection and one of the papers to be presented at this session will analyze the considerations leading up to the selection of the type of equipment used. In addition to the papers which are to be presented, a three-reel motion picture of the actual construction of the Bagnell dam will be shown. The fourth session will consist of subjects directly related to the communication field such as,—the time factor in telephone transmission, tape armored toll cable, economic surveys, and advance planning of long distance facilities.

## Entertainment

The banquet will be held on Friday evening, October 23, at the Kansas City Athletic Club, which is known to have one of the finest banquet rooms in the Middle West. Between courses, entertainment will be provided by some of the best talent obtainable, and follow-

ing the banquet there will be dancing with music furnished by an orchestra well qualified to please all.

Golf will be arranged for all those who may wish to play.

## Ladies' Entertainment

The ladies attending will be entertained with a luncheon bridge at one of the golf clubs, a theater party, and shopping tours. Nothing will be left undone to make their visit to Kansas City a pleasant one.

## Registration

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

A nominal fee of \$1.00 each will be asked of members and their guests. There will be no fee required for student members.



Kansas City Municipal Airport Terminal

Thursday

9:00 a.m.—Registration

10:00 a.m.—Opening of Meeting

Welcome Address—Mayor Bryce B. Smith

Opening Address—G. C. Shaad,

Vice-President, South West District, A.I.E.E.

10:40 a.m.—Student Session

M. P. Weinbach, *Chairman*

(Papers will be presented by members of the Student Branches of the South West District, No. 7)

2:00 p.m.—Student Session—*continued*

2:00 p.m.—Transmission and Distribution

D. D. Clarke, *Chairman*

Electric Arc Welding in Building Construction

P. N. VINTHER  
Dallas Power & Light Co.

The Effect of Wave Form on the Operation of Induction-Type Protective Relays

P. H. ROBINSON  
Houston Lighting & Power Co.

The Telegraphic Pilot-Wire Relay System

C. H. FRIER  
Oklahoma Gas & Electric Co.

Calculating Load Division in Distribution Systems

C. T. ALMQUIST  
The University of Oklahoma

Backfires in Mercury-Arc Rectifiers

J. SLEPIAN and L. R. LUDWIG  
Westinghouse Electric & Mfg. Co.

Overvoltages on Transmission Systems caused by Dropping of Load

E. J. BURNHAM  
General Electric Co.

8:00 p.m.—St. Louis-Bagnell Interconnection

Stanley Stokes, *Chairman*

Interconnection of the 25- and 60-cycle Systems of the Union Electric Light & Power Co.

E. L. HOUGH and L. V. NELSON  
Union Electric Light & Power Co.

Automatic Control for Variable-Ratio Frequency Converters

E. K. SHIVELY  
Union Electric Light & Power Co., and  
G. S. WHITLOW  
General Electric Co.

Three-Reel Motion Picture of the Actual Construction of the Bagnell Dam



**Friday**

9:30 a.m.—Communication

E. T. Mahood, *Chairman*

Forecasting Population for  
Engineering Purposes

J. N. HOLSEN  
Southwestern Bell Telephone Co.

Advance Planning of Long Distance Telephone  
Facilities

O. C. McFARLAND  
Southwestern Bell Telephone Co.

Tape-Armored Telephone Toll Cable

C. W. NYSTROM  
Southwestern Bell Telephone Co.

The Time Factor in Telephone Transmission

O. B. BLACKWELL  
American Telephone & Telegraph Co.

2:00 p.m.—Inspection Trips and Recreation

2:30 p.m.—Board of Directors' Meeting

7:00 p.m.—Banquet and Entertainment

**Saturday**

9:30 a.m.—Transmission and Distribution

G. C. Shaad, *Chairman*

Lightning Disturbances on Transmission Lines

D. C. JACKSON, JR., and R. W. WARNER  
University of Kansas

Impulse-Voltage Tests on a 4,800-Volt  
Distribution Substation

H. W. COLLINS and E. E. PIEPHO  
Detroit Edison Co., and

J. J. TOROK  
Westinghouse Electric & Mfg. Co.

Corona Energy Loss

W. D. WEIDLEIN  
Black and Veatch

Application of Primary Distribution Fuses

F. E. SANFORD  
Union Gas & Electric Co.

The Expulsion Fuse

J. SLEPIAN and C. L. DENAULT  
Westinghouse Electric & Mfg. Co.

Fuse Cut-outs with Special Reference to Their  
Design and Application for A-C. Distribution  
Circuits

E. G. NEWTON  
General Electric Co.

1:30 p.m.—Inspection Trips and Recreation



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# INSPECTION TRIPS

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Kansas City is the home of nearly every type of industry that can hold the attention of engineers, especially electrical engineers. Some interesting features to be studied are the new super-synchronous motor installations for the cement mills, the completely automatic system of the Kansas City Power & Light Company, the application of electricity to the milling industry, and the new automatic installations of the Southwestern Bell Telephone Company. Engineers interested in the application of electricity to water supply systems also will find Kansas City a desirable place to study.

Other points of interest that may be visited during the meeting are briefly described in the following paragraphs. A schedule of trips will be announced at the meeting.

## **Grand Avenue Station**

In 1927, the Kansas City Power & Light Company acquired the old Grand Avenue Station of the Kansas City Public Service Company (the street railway company). This plant which was first put in service in 1903 was antiquated and expensive to operate; however, the location made it not only favorable for central power production and distribution, but ideal as a production center for the continually increasing demand for central district steam heat. Upon the acquisition of this property, a rebuilding program was started which has extended over a four-year period and has involved the expenditure of nearly \$6,000,000. The result has been the conversion of an obsolete inefficient station into a strictly modern, efficient, high-pressure power and heating plant. All central station men will want to review this rebuilt work and see how increased efficiency was brought about in so short a time.

## **Distribution System with Automatic Control**

In addition to its two generating stations, Kansas City for its size probably has the most complete automatic power distribution system of any city in the United States, with all power except for 13.2-kv. primary service supplied from substations equipped with complete automatic control. The

system consists of two major parts: the d-c. substations, and city a-c. substations with outdoor a-c. suburban stations.

The d-c. system embraces a restricted district in the downtown business section, with d-c. network fed from five synchronous converter substations of two automatically controlled machines, each of which feeds an individual bus, being tied together only through the d-c. network.

The a-c. system consists of seven 13,200/4,400/2,550Y-volt, three-phase, four-wire automatic substations. These stations located in various parts of the city are architecturally designed to conform to the type of district in which they are located. Interior designs follow usual practise, but with such additional features as comply with latest ideas. Stations of interest in this group are: Substation R of residential type using reinforced concrete for switch barriers and regulator bays; Substation A of residential type using "Ha-dite" concrete barriers; and the latest Substation H located in a newly developed business and apartment district, with the station exterior designed to conform with the general architectural plan of the district. The interior design is in artistic agreement



*New Building of the Kansas City Power & Light Company*

## INSPECTION TRIPS—Continued

with the exterior. Special features of this station include switch structures and regulator bays of fabricated stone, all circuit breakers frame-mounted and not supported by the barriers, and a heating and ventilating system fully automatic in its operation.

### Kansas City Power and Light Building

The new building of the Kansas City Power & Light Company features a 13,200/199/115-volt, three-phase, four-wire, vertical distribution network system. This equipment will be ready for service and inspection during the meeting.

### Southwestern Bell Telephone Building

A visit to the Bell Telephone building will afford an opportunity to inspect a large telephone power plant, a large

telegraph repeater station, a panel-type dial central office, a large manual central office, toll and local operating rooms, etc. The Benton-Chestnut exchange which is to go into operation October 1, 1931 has the most modern type of dial equipment, together with associated operators' positions. This exchange has 16,500 terminal stations with an average of 120,000 originating and 117,000 incoming calls per day.

### Bagnell Hydroelectric Development

The committee has arranged a trip to the Bagnell water power project of the Union Electric Light & Power Company located in the center of the state. This trip, in addition to the fine papers on this subject, will give an interesting picture of this much discussed project.

### Hotel Reservations

Reservations for hotel rooms should be made by writing directly to the hotel preferred. In the following table, rates are listed for the headquarters hotel, the Kansas City Athletic Club, and several other hotels conveniently located in the neighboring vicinity. Members of the Dallas, Houston, Oklahoma City, and Wichita Athletic Clubs may enjoy reciprocal relations:

Hotel	Hotel Rates	
	Single Rooms	Double Rooms
Kansas City Athletic Club	\$3.00-\$5.00	\$5.00-\$7.00
Baltimore	\$1.50-\$2.00*	\$2.50-\$3.00*
	\$2.50-\$5.00	\$3.50-\$6.00
Muehlebach	\$2.50-\$3.50*	\$4.00-\$5.00*
	\$3.50-\$8.00	\$5.00-\$10.00
Phillips	\$2.50-\$4.00	\$4.00-\$6.00
Pickwick	\$2.50-\$4.00	\$3.50-\$6.00
President	\$3.00	\$5.00
Stats.	\$2.00-\$3.50	\$2.50-\$5.50

\* Rooms without bath. All others include bath.



Southwestern Bell Telephone Building

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Read subsequent issues of  
**ELECTRICAL ENGINEERING**  
for a complete account  
of this Meeting