



1962
AIEE SPECIAL
TECHNICAL CONFERENCE
ON
EXTRA HIGH VOLTAGE,
COMMUNICATIONS,
CONTROL AND RELAYING

BAKER HOTEL
DALLAS, TEXAS
MARCH 14-16



Downtown Dallas Skyline

Sponsored by
POWER SYSTEM COMMUNICATIONS
COMMITTEE
RELAYS COMMITTEE
SUBSTATIONS COMMITTEE

A "How To" Conference concerning the application of communication, control, and relaying equipment to EHV power systems.

General Introduction

A double opportunity to "brush up" on late developments in a challenging facet of the electrical industry and visit a dynamic city which symbolizes progress in many lines will be afforded those who attend the Technical Conference of the American Institute of Electrical Engineers at the Baker Hotel in Dallas on March 14, 15 and 16, 1962.

Extra high voltage transmission lines and their impact on communications, control and relaying, will be the subject of the conference, which will be sponsored by the national AIEE committees on Communications, Relays, and Substations, and hosted by the North Texas Section, AIEE.

Approximately 300 engineers from many parts of the world are expected to attend this conference for timely and useful exchanges of ideas. Subjects to be covered include Impact of EHV, Communication Characteristics, EHV Workshops, EHV Protection, Trends in Communication Systems, Telecommunications and Control Circuit Transients.

Formal presentation of papers will be limited to allow ample time for questions and discussion.

Wednesday—March 14

OPENING SESSION

10:00 a.m.

Terrace Room

IMPACT OF EHV

J. B. ROBUCK, *General Conference Chairman*
Presiding

WELCOME TO AIEE District 15 — MR. P. G. WALLACE, *Vice President*.

WELCOME TO DALLAS — MR. ELGIN B. ROBERTSON, *Mayor Pro-Tem*.

INTRODUCTION TO EHV — E. S. KOCSAN, Pennsylvania Electric Company.

CONTROL AND PROTECTION OF THE DALLAS-HOUSTON 345 kv LINE — J. P. BARRON, Dallas Power & Light Co.; E. L. BUSBY, Texas Power & Light Co.; CLAYTON KAYSER, Houston Lighting and Power Co.; M. J. PICKETT, Texas Electric Service Co.

APPLE GROVE 750 kv PROJECT DATA LOGGING AND INSTRUMENTATION — E. R. TAYLOR, JR., G. G. LANGDON, J. JALUVKA of Westinghouse Electric Corp. and R. H. SCHLOMANN of American Electric Power Service Corp.

12:15 p.m.

Terrace Room

LUNCHEON

Presiding: MR. P. G. WALLACE

Speaker: MR. JOHN L. KELLY, Bell Telephone Lab., New Jersey.

Subject: "REDUNDANCY IN COMMUNICATIONS"

2:00 p.m.

Terrace Room

**COMMUNICATION CHARACTERISTICS
OF EHV CIRCUITS**

Presiding: E. S. KOCSAN

RADIO INFLUENCE VOLTAGE / RADIO INFLUENCE FIELD RATIOS FOR 500 kv LINE — J. J. LAFOREST and E. A. WHEPLEY, General Electric Company.

Covers ratio of conducted RF potentials to electric field values at ground level treating radio noise and carrier aspects with calculated and measured values.

R. F. PROPAGATION ON POLYPHASE LINES — L. O. BARTHOLD, General Electric Company.

Using modal components characterizing the line under study, a method is discussed which permits solution of RF propagation problems, including the effects of transposition, ground wires, intermediate faults and a general impedance termination.

USE OF INSULATED GROUND WIRES ON
A TRANSMISSION LINE FOR COMMUNICA-
TION CHANNELS — G. E. FARMER, TVA.

Treats the results obtained from 100 miles test installation on a 161 kv line over the full carrier band.

A DIRECT-READING CARRIER-FREQUEN-
CY IMPEDANCE METER — H. I. DOBSON, TVA.

Covers the design and operation of a RF im-
pedance meter and presents accuracy and flexibility
achieved in use.

Evening Session

7:30 p.m. Mezzanine Rooms

CONCURRENT WORKSHOP MEETINGS

POWER SYSTEM COMMUNICATIONS
COMMITTEE Texas Room
E. W. KENEFAKE, *Chairman*

RELAYS COMMITTEE The Lounge
J. R. LINDERS, *Chairman*

SUBSTATIONS COMMITTEE English Room
R. F. STEVENS, *Chairman*

These workshops are being held to capitalize on
the presence of members of all three Technical Com-
mittees so that consideration can be given to problems
common to two or more committees. All conferees
are strongly urged to attend and contribute to the dis-
cussion of these problems.

Thursday—March 15

9:00 a.m. Terrace Room

EHV PROTECTION CONSIDERATIONS

Presiding: J. R. LINDERS

PROTECTIVE RELAYING PRACTICES FOR
EHV SYSTEMS IN WESTERN EUROPE — R. A.
LARNER, Texas Electric Service Company.

A review of practices and philosophies of emi-
nent European protection engineers.

IMPROVEMENTS IN CASCADE POTEN-
TIAL TRANSFORMERS — L. W. MARKS, General
Electric Company.

Describes a new cascade potential transformer
including major changes in mechanical and electrical
circuits as well as the mechanical parts.

PROTECTION OF CIRCUITS WITH SERIES
CAPACITORS — JOHN BERDY, General Electric
Company.

An evaluation of standard relay schemes and de-
velopment of a more universal method of protecting
series capacitor circuits.

2:00 p.m.

Terrace Room

TRENDS IN COMMUNICATION SYSTEMS

Presiding: W. A. DERR

AMPLIFICATION OF POWER LINE CARRIER AT INTERMEDIATE STATIONS — D. E. JONES and J. R. LESLIE, Hydro Electric Power Commission of Ontario.

Covers the investigation of the potentiality and limitations of a carrier amplifier inserted directly in the carrier bypass cable for boosting the gain of several telemetering and control signals.

TRENDS IN SUPERVISORY AND TELE-METERING SYSTEMS — W. L. METZ, Westinghouse Electric Corporation.

FREQUENCY-SHIFT TONES FOR POWER SYSTEM RELAYING — E. W. HASSEL and E. S. STAPLES, General Electric Company.

Treats the use of high speed tones in the voice range for transfer trip relaying with discussion of application approaches for maximum security and reliability.

6:30 p.m.

The Lounge, Mezz.

SOCIAL HOUR

7:30 p.m.

Crystal Ballroom, Mezz.

BANQUET

Toastmaster: ELGIN B. ROBERTSON

Speaker: DR. A. W. WORTHAM, Manager of Corporate Quality Assurance and Reliability, Texas Instruments Incorporated.

Subject: "THEORY OF RELIABILITY"

Friday—March 16

9:00 a.m.

Terrace Room

TELECOMMUNICATIONS

Presiding: R. L. BRINTON

CHARACTERISTICS OF TELEPHONE COMPANY CHANNELS FOR SIGNALLING SERVICES — L. R. HUGGLER, Bell Telephone Company of Pennsylvania.

Transmission and noise influence considerations when telephone facilities are used for tone signalling and control services.

AN UNINTERRUPTABLE, STABLE, POWER SUPPLY FOR CRITICAL LOADS — J. FINEHOUT, United States Motors Corporation.

A motor-generator, clutch, flywheel engine package providing uninterrupted power.

MICROWAVE SYSTEMS SYMPOSIUM —
MICROWAVE SUBCOMMITTEE OF POWER
SYSTEMS COMMUNICATION COMMITTEE.

User will relate his experience with microwave covering the original system, its expansion, installation and experiences. Manufacturers will discuss new products concentrating on those applicable to the needs of the utilities.

1:30 p.m.

Terrace Room

CONTROL CIRCUIT TRANSIENTS

Presiding: J. A. TURNER

VOLTAGE TRANSIENTS IN CONTROL COMPONENTS — E. W. WOODY, Appalachian Power Company.

Recent experiences with overvoltages on control circuits.

A STUDY OF SURGE VOLTAGES OCCURRING ON THE CONTROL BUS AT WALTON SUBSTATION — JOHN B. WALLACE, Detroit Edison Company.

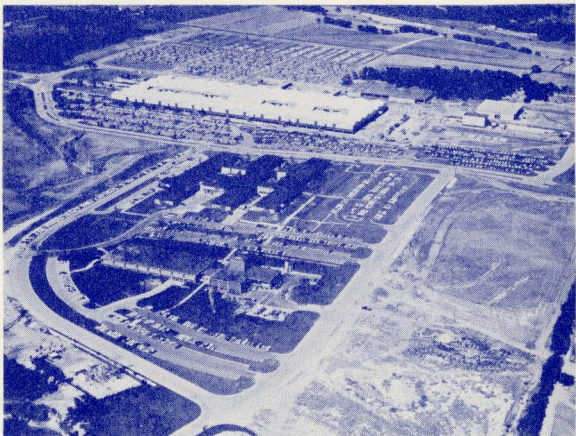
Investigation of possible cause and transient voltage magnitudes of externally caused control bus surges.

SHIELDING MEASURING CIRCUITS FROM FAST RISE VOLTAGES AND CURRENTS — R. E. DIETRICH and D. A. GILLIES, both with Bonneville Power Administration.

Staged tests confirm techniques for isolating low energy circuits from induced power system currents and voltages.

4:00 p.m. to 6:00 p.m.

Inspection trip to Texas Instruments Incorporated to observe Transistor Manufacture, Crystal Growing and Manufacturing. Busses will leave and return to Baker Hotel. One bus will return via Love Field, arriving there about 6:30 p.m.



Texas Instruments Incorporated

Inspection Trip

Texas Instruments Incorporated, one of the "success stories" of Dallas, will be visited on an inspection trip Friday, March 16. Special busses will leave the Baker Hotel at 4 p.m. and return at 6:30 p.m. One bus will return via Love Field, arriving there at about 6:30 p.m., for those who are leaving by air.

Not only has Texas Instruments helped Dallas earn a reputation as one of the world's leading electronics centers, but it also has proved that a company with plants and offices over much of the world can be operated successfully from a Dallas headquarters. The firm, officially listed as an "international manufacturing and service organization engaged in commercializing new technologies in materials, electronics and the earth sciences," employs more than 18,000 persons. Its 1960 sales billed made it the 206th largest industrial company in the United States.

Authors' Breakfast

By invitation, the authors, session chairmen and vice-chairmen of each day's technical sessions will meet at breakfast to become better acquainted and receive last minute instructions. Breakfast will be served in the Tallyho Room at 8 a.m.

Entertainment for Ladies

Suite 950, Baker Hotel, will be available during the entire conference for informal gatherings of the ladies. Coffee will be served each morning and cards and tables will be provided for bridge and canasta. The ladies are cordially invited to use these facilities, where hostesses will provide information on shopping tours, restaurants, and other attractions.

Fees and Tickets

Registration Fees

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|-----------------|-------|
| Members | \$12* |
| Non-Members | \$15* |
| Student Members | None |

** Includes cost of bound copy of Conference Proceedings.*

Entertainment

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| Wednesday Luncheon | \$3.00 |
| Thursday Banquet | \$5.75 |

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|-----------------|--------|
| Inspection Trip | \$1.00 |
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Additional copies of Conference Proceedings will be on sale at the registration desks for \$7.50. Registrants who mail checks with their advance regis-

trations before March 1, 1962, to the Registration Chairman will receive the Proceedings postpaid before the Conference. Checks should be made payable to Mr. R. W. Tummy, Treasurer, AIEE Conference.

Registration desks, on the Mezzanine of the Baker Hotel, will be open for early registration from 5 to 9 p.m., Tuesday, March 13th and will close at noon, Friday, March 16th.

All technical programs will be in the 17th floor Terrace Room of the Baker Hotel.

Hotel Reservations

A block of rooms has been set aside for reservation requests at the Baker Hotel, Dallas, Texas, for members and guests attending the meeting. Letters of request for reservations should be sent *to the hotel* specifically referring to the AIEE meeting. The hotel will confirm directly to you.

The room rates per day are as follows:

Single Rooms for one

\$5.00, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00,
9.50, 10.00, 11.00

Double Rooms for two (Double Bed)

\$9.50, 10.00, 10.50, 11.00, 11.50, 12.00,
13.00

Twin Bedrooms for two

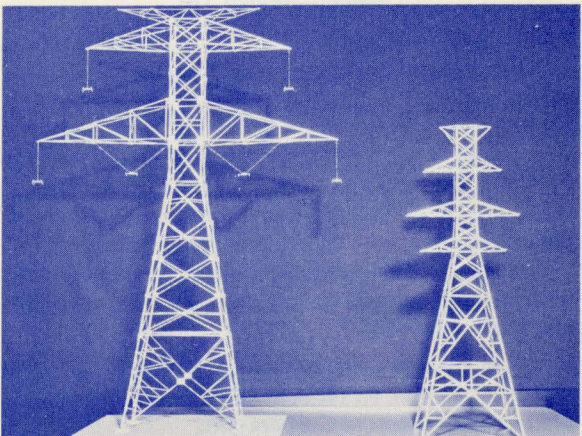
\$11.00, 12.00, 12.50, 13.00, 14.00, 15.00

Parlor Suites

\$25.00, 36.00 and up (*Information on deluxe suites and dormitory rates upon request*)

Rooms assigned will conform to requests as near as possible.

The Chairman of the Hotel and Hospitality Committee will maintain close liaison with the Baker Hotel to insure the expeditious handling of all requests.



*Model 345 KV Transmission Tower
with 138 KV Tower for Comparison*

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