

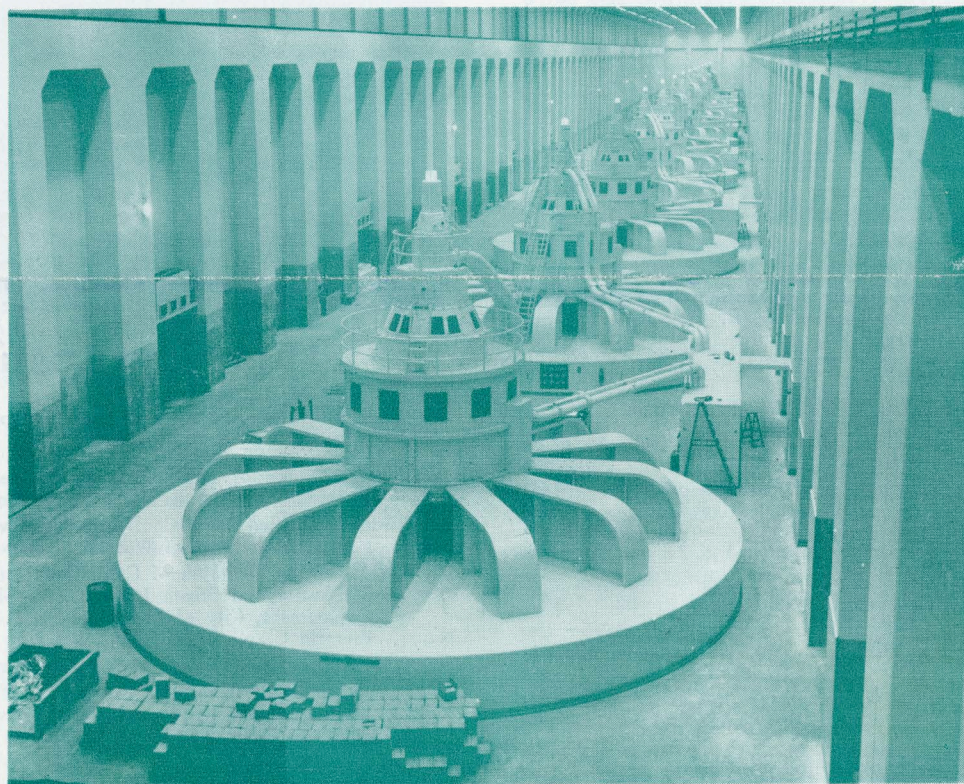


PACIFIC GENERAL MEETING

August 28-30, 1957

Pasco, Washington

Headquarters:
Pasco Senior High School



Walla Walla District U. S. Corps of Engineers

Powerhouse at McNary Dam

The AIEE Pacific General Meeting will be held in Pasco, Washington, August 28, 29, and 30, 1957. The headquarters for the meeting and all technical sessions will be in the new Pasco Senior High School.

The technical program will be notable for the variety of subject matter as well as the quality of the papers. The social and recreational programs have been planned for the engineer and his family and will be mostly outdoors. The inspection trips will be both traditional and precedent setting with a strong emphasis on variety to suit a wide field of interests.

The guests will find convenient parking close to meeting headquarters, hotels and motels. The family groups will find the outdoor recreational activities and the semi-arid climate to be very attractive.

The famous Ellensburg Rodeo will be held Labor Day weekend and many county fairs and other events prior to and following the AIEE Pacific General Meeting will be of extraordinary interest to family groups. A trip through the apple and other fruit orchards as well as the endless variety of vegetable growing and packing plants of the Inland Empire sections of eastern Oregon and Washington will be an unforgettable experience. The snow-capped Rockies to the east and the Cascades to the west provide recreation, camping and scenery unmatched in beauty and variety. The almost complete absence of rain during August and September adds tremendously to the pleasure of the outdoors; the well marked trails and excellent highways located to provide the most favorable approaches and maximum accessibility will long remain a memorable experience.

GENERAL SESSION

The General Session on Wednesday morning, August 28, will include an address by president Walter J. Barrett. It will also feature speakers of national reputation in the fields of atomic power. Frank J. McCune, vice-president and general manager of the Atomic Products Division of the General Electric Company and Fellow of the Institute, will discuss "Outstanding Problems in the Atomic Energy Field." Plans include another speaker of prominence who will cover other important phases of the atomic energy industry.

HOTEL RESERVATIONS

A large number of rooms in hotels and motels located in Kennewick, Pasco, and Richland are available. These rooms will be reserved until the first day of the meeting.

Hotel and motel charges will be: single—\$5.00 to \$6.00, double—\$5.00 to \$8.00 and twin—\$7.00 to \$10.00.

There are rooms available with a double and single bed and also with two double beds, and persons wanting such special arrangements should state their needs in the request for reservations.

Persons planning to attend are urged to write AIEE Pacific General Meeting, Pasco, Washington, and express their preferences for type of room and facility.

LUNCH FACILITIES

The several luncheons described at other places will be supplemented by a lunch service in the headquarters building. The prices will be a matter of individual choice. *Continued on page 4*

AIEE PACIFIC GENERAL MEETING — PROGRAM — Pasco, Washington, August 28-30, 1957

ADVANCED COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40¢ each (80¢ each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$10 denominations are available for those who wish to avoid remittance by check or otherwise. The Transactions Papers will also be published in the bimonthly publications.

Note: Unnumbered Conference Papers (CP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the Transactions and are not presently scheduled for reproduction in any form by the Institute.

Wednesday, August 28

2:00 p.m.—Power Generation

Presiding: R. L. Earnhart.

CP.* Friction and Windage Loss Tests of McNary Generators With Coupled and Uncoupled Turbine. D. R. Cox, R. L. Krahn, U. S. Army Corps of Engineers.

CP57-904. Transient Performance of Excitation Systems. R. L. Krahn, U. S. Army Corps of Engineers.

CP.* Planning and Design Considerations for Ice Harbor Powerhouse. G. H. Von Gunten, J. R. Kline, U. S. Army Corps of Engineers.

CP57-905. Gas Turbines Applied to Power Generation. K. L. Rieke, W. N. Hornberger, Westinghouse Electric Corp.

CP.* Large Gas Turbines for the British Columbia Power Commission. A. O. White, General Electric Co.

2:00 p.m.—Nucleonic and Radiation Instruments

Presiding: L. H. Holthausen, M. M. Dye.

CP.* A Reactor Rod Control System for Pressurized Water Reactors. G. S. Keeley, W. J. O'Bryant, Westinghouse Electric Corp.

CP.* A Nuclear Instrumentation System for Pressurized Water Reactors. W. J. O'Bryant, G. S. Keeley, Westinghouse Electric Corp.

CP.* Experimental Determination of Reactor Control System Transfer Functions. G. St. Ledger Barter, General Electric Co.

CP.* Characteristics of Pressurized Water Reactor Plant Dynamic Pressure Measuring Systems. E. J. Brooks, Westinghouse Electric Corp.

57-906. Safety Systems for Nuclear Power Reactors. I. M. Jacobs, I. General Electric Co.

2:00 p.m.—Human Engineering

Presiding: D. W. McLenagan.

CP.* (Title to be selected). Dr. G. F. Kennard, I.B.M. Corp.

CP.* Assistance to Engineers from Human Factors Research. Dr. Maurice Rappaport, Stanford Research Institute.



Midway Substation

CP.* Advanced Instrumentation. Dr. Jesse Orlansky, Dunlap and Associates.

CP.* Remote Handling and Manipulation of Hot Cells. Dr. J. W. Wissel, Lockheed Aircraft Corp.

CP.* Human Factors in Maintenance of Electronic Systems. Dr. N. D. Warren, University of Southern California.

2:00 p.m.—Wire Communication

Presiding: S. J. McDermott.

CP57-930. Applying Carrier to Existing Plant, Northern California Telephone Co. E. M. Calderwood, Retired; G. A. Furniss, I. J. Robertson, Pacific Telephone and Telegraph.

CP57-907. A Transistorized Repeater for Use with the 45BN Cable Carrier System. V. Babin, R. H. Fish, Lenkurt Electric Co.

CP57-908. Application of 8 Kv Neutralizing Transformers. A. W. Adams, Bonneville Power Administration; R. E. Kistler, Pacific Telephone and Telegraph; T. W. MacLean, Washington Water Power.

CP.* Carrier Telephone System as Used by Southern Pacific Railroad. R. R. Edwards, Southern Pacific Co.

CP.* United States to Alaska Cable. C. A. Bartlett, American Telephone and Telegraph; T. H. Stewart, Alaska Communication System, U. S. Army.

Thursday, August 29

9:00 a.m.—Transmission and Distribution

Presiding: E. C. Starr.

CP57-909. 230 Kv Wood Pole Line Spokane to Lewiston. Earl Baughn, Washington Water Power Co.

CP57-910. Simplified Sag Calculations for Power Transmission Lines. F. J. Hubert, Dept. of Water and Power, City of Los Angeles.

CP57-911. Surge Protection of Cable-Connected Power Transformers at Skatgerood Steam Plant. C. M. Short, Water and Power Department, City of Los Angeles; T. J. Bliss, Westinghouse Electric Corp.; M. K. Enns.

CP.* Effect of Flat Rate on Electric Power Consumption. F. J. Mollerus, General Electric Co.

57-912. The Digital Computer and Power System Short Circuit Calculations. Martin J. Lantz, Bonneville Power Administration.

9:00 a.m.—Nucleonics I

Presiding: J. V. Kresser.

57-396. Some Operational Problems of the Nuclear Power Plant. R. L. Witzke, A. R. Jones, Westinghouse Electric Corp.

CP.* Operating Hanford Reactors. D. S. Lewis, General Electric Co.

CP.* Training Operating Personnel for Nuclear Power Plants. W. G. McKeown, Westinghouse Electric Corp.

CP.* A Method of Evaluating Reactor Hazards. A. B. Carson, K. W. Hess, L. H. McEwen, General Electric Co.

9:00 a.m.—Industrial Power Systems I

Presiding: R. A. Erwin.

CP57-926. Matching Power Systems to Industrial Safety Standards in the Pulp and Paper Industry. H. E. Springer, Rayonier, Inc.

CP57-913. Electric Safety in the Cannery. R. S. Wilson, Consulting Electrical Engineer

CP.* Machine Grounding Practices. C. W. Cutler, Consulting Engineer.

CP.* Power Supplies for an Operating Reactor. L. P. Reinig, General Electric Co.

9:00 a.m.—Radio Communication

Presiding: T. W. Stringfield

CP.* Pocket Carried Radio Systems. John Mitchell, Portable Products.

CP.* Modifying Transmitters for Single Sideband Operation. Norman Young, Federal Telecommunications Laboratories.

CP57-914. Willamette Valley Radio System for the U. S. Corps of Engineers. C. Pederson, U. S. Army Corps of Engineers; D. J. Mairhart, Bonneville Power Administration.

57-915. Microwave Radio Communication under Heavy Ice, Sleet and Snow Conditions on the BPA System. Emory Strong, E. J. Warchol, Bonneville Power Administration; Stanley Benson, Philco Corp.



Cofferdam at Ice Harbor

2:00 p.m.—Substations

Presiding: A. A. Straub.

CP.* Fire Protection and Minimizing Fire Hazards in Substations. F. J. Maas, Bonneville Power Administration.

CP57-916. High Voltage-High Capacity Interrupting Test Facilities of Southern California Edison Company. E. E. Tugby, Southern California Edison Co.

CP57-917. Application of Pole-Mounted Capacitors to a Primary Network Distribution System. C. F. Bannon, L. L. Gleason, Seattle City Light.

2:00 p.m.—Nucleonics II

Presiding: W. J. Dowis.

57-404. Electrical Problems in Electrical Burnout Testing of Nuclear Fuel Elements. T. W. Hunt, Westinghouse Electric Corp.

CP57-684. Analog Comparative Study of the Transient Performance of a Dual Cycle Boiling Water Reactor Nuclear Power Plant. D. W. Leiby, General Electric Co.

CP.* A Cockcroft-Walton Multiplier Design Study. R. N. Edwards, G. Jernakoff, General Electric Co.

CP.* Optimizing Reactor Design on a Digital Computer. J. O. Orton, General Electric Co.

CP.* Design of a Radially Symmetrical Heat Transfer Analogue. D. E. Sebade, General Electric Co.

2:00 p.m.—Conference On Industrial Power Rectifiers

Presiding: Waldo Porter.

A conference on safety, maintenance and operation of power rectifier stations, with speakers from several rectifier using plants in the western states.

2:00 p.m.—Television and Aural Broadcasting

Presiding: E. D. Barcus.

57-918. A Modified Microwave System for Color Television Transmission. F. F. McClatchie, Pacific Telephone and Telegraph Co.

57-919. A Video Differential Phase and Gain Equalizer. J. H. Clark, I. Pacific Telephone and Telegraph Co.

57-723. Statistical Encoding for Text and Picture Communication. I. W. S. Michel, Bell Telephone Laboratories. (For Discussion)

CP.* A New Automatic Frequency Control Circuit. L. B. Bennett, Pacific Telephone and Telegraph Co.

Friday, August 30

9:00 a.m.—Space Heating and Air Pollution

Presiding: R. G. Scott

CP.* Electric Greenhouse Heating—J. A. MacCarthy, B-C Electric.

CP.* A Simplified Control for Combined Electric Heating and Cooling Installations—L. N. Roberson, L. N. Roberson Company.

CP.* Measurement of Air Contamination—J. C. Beckett, Wesix Corporation.

9:00 a.m.—Safety

Presiding: H. E. Vann

57-920. A Compendium of Grounding Techniques for Personnel and Equipment Protection—H. E. Heddeshimer, General Electric Co.

CP.* Comparison of Safety and Performance Requirements for Nuclear and Conventional Power Plants—A. F. Arley, Pacific Gas and Electric; E. P. Peabody, General Electric Co.

CP.* Safety in Nuclear Power Plants—S. Levy, General Electric Co.

9:00 a.m.—Industrial Power Systems II

Presiding: W. Ferguson

CP.* Electric Power Requirements of Oil Refineries in Pacific Northwest—J. T. Brannan, Shell Oil Company.

CP.* Design of Industrial Power Systems to Protect Motors from High Speed Reclosing of Supply Breakers—F. Nolan, D. Dalasta, Allis-Chalmers Manufacturing Company.

CP.* Power Supply for the Hanford Atomic Plant—Ralph Haynes, General Electric Company.

CP.* Fault Testing on the Power System of the Hanford Plant—A. A. Maxwell, General Electric Company.

2:00 p.m.—Magnetic Amplifiers

Presiding: A. B. Rosenstein

CP.* Analysis of Non-Resonant Charging Circuit for Magnetic Pulse Generation—N. L. Weinberg, Westinghouse Electric Corp.

CP57-921. Core Reset Functions—Magnetic Amplifier Analysis. Pt. II. Determination of Amplifier Performance—G. C. Feth, General Electrical Company.

CP57-922. Magnetic Amplifier Design—Pt. I The Core—R. E. Anderson, General Electric Company.

CP57-923. The Block-Diagram Method of Analysis Applied to the Saturable Reactor—R. M. Hubbard, Boeing Airplane Co.

2:00 p.m.—Flight Test Instrumentation

Presiding: W. S. Pritchett

CP57-929. Transistorized Airborne Data Acquisition System—A. I. Morrison, Electrical Engineering Company of California.

CP.* Surface Temperature Measurement in Flight Test Instrumentation—A. E. Davis, Boeing Airplane Corporation.

CP.* Magnetic Recording of Flight Test Data—R. M. Strassner, Ampex Corporation.

CP57-928. A Miniaturized Instrumentation Converter System for Aircraft Flight Testing—H. E. Hommes, McDonnell Aircraft Corporation.

CP57-924. Improved Static Defect Calibration System—B. J. Heilweck, McDonnell Aircraft Corporation.

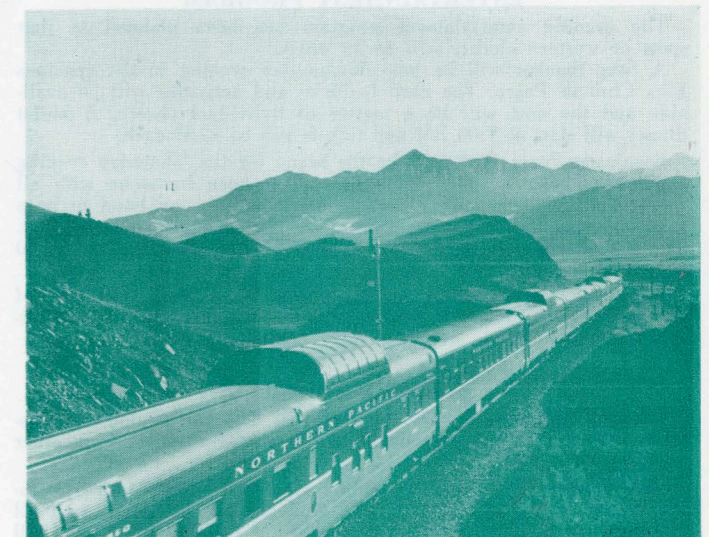
2:00 p.m.—Relaying

Presiding: M. A. Bostwick

CP57-927. Improved Protection for Industrial and Commercial Loads with Emphasis on Conductor with the Utilities Protection—M. A. Bostwick, Portland General Electric Co.

CP.* Portable A-C Analyzer—P. G. Moore, General Electric Co.

57-796. Digital Short Circuit Solution of Power System Networks Including Mutual Impedance—M. J. Lantz, Bonneville Power Administration.



Northern Pacific's North Coast Limited

REGISTRATION

The registration activities will be located in the Pasco Senior High School and will open Tuesday noon and daily thereafter until Friday evening. Fees for all activities will be collected at this place.

All mail for persons attending or inquiries concerning the meeting should be addressed to AIEE Pacific General Meeting, Pasco, Washington, and marked attention of the appropriate person or activity.

ADVANCED REGISTRATION

All persons are urged to return their advanced registration cards promptly. The registration fees will be \$5.00 for members and \$8.00 for non-members. Student members and families of members will not be required to pay a fee.

TRANSPORTATION

West Coast Airlines has several flights each day between Northwest, United and Western Airlines terminals and Pasco. The WCA schedules are convenient and provide the best connections at transfer points in Spokane, Seattle, Portland and Boise.

The most modern streamliner trains of the Great Northern, Northern Pacific and Union Pacific Railways are routed through or close to Pasco. The schedules will be found to be most convenient both as to arrival and also for departure from Pasco.

The Greyhound Bus system has frequent arrivals from and departures to all important west coast cities. Many of the buses are express runs to distant points routed through matchless scenery and pass important historical and industrial sites.

The Pasco area is the junction point for many of the more important highways in the Northwest. These highways radiate to the key cities of the Northwest and are relatively new.

LADIES PROGRAM

All visiting ladies will be guests at a brunch Wednesday morning at 10:00 in the patio of the Desert Inn in Richland. All persons planning to attend are urged to register in advance of Wednesday morning.

The Kennewick Country Club will welcome the ladies to a buffet supper Wednesday evening at 6:30. The supper will be followed by a Bingo Party. Tickets will be \$2.75.

The Officers Club in North Richland will be the location for Luncheon on Thursday at 12:45 P.M. Bridge and Canasta will follow the luncheon. Tickets will be \$1.75.

Ladies are cordially invited to play golf at any time at the Kennewick Country Club. It is suggested that ladies who are not interested in inspection trips may find golf and swimming at the Kennewick Country Club to be a very pleasant morning activity.

The Tri-Cities have many park areas and facilities which are ideally suited for family picnicking, swimming, tennis and recreational activities. Riding horses are generally available.

The weather in the Tri-Cities will probably be warm. Clothes and shoes should be cool and comfortable. Sun dresses with jackets are especially good and a sweater or stole should be included for the cool evenings.

ENTERTAINMENT PROGRAM

The evening entertainment program has been planned so that sport or western clothes will be in order.

A Stag Smoker will be held Wednesday evening in the spacious Elks Club in Pasco. The club facilities and activities will be available and the cost will be a matter of individual choice. A buffet dinner will start at 7:00 PM and tickets will be \$2.50 each.

Sacajawea State Park will be the scene for the Thursday evening activities. There will be plenty of real western barbecue with all the trimmings. The Snake River Cowboys will be on hand to keep things moving. Several water sports activities will also be presented. The entire affair at Sacajawea Park will be covered by the \$2.00 tickets.

Following the activities at Sacajawea State Park facilities of the Pasco Elks Club will be available for dancing and club activities for those who do not have other plans.

STUDENT PROGRAM

Informal gatherings on Wednesday will help the students of Districts #8 and #9 get acquainted and meet the students from other districts.

The Student Luncheon Thursday noon will provide further opportunities to get acquainted. The students will be guests and all members are invited to attend. A speaker of national reputation will discuss student problems and interests.

The Thursday afternoon meeting for students will feature presentation of two top-ranking district contest papers and will include a discussion of student branch affairs.

The Faculty Counselors meeting will also be held Thursday afternoon.

The student programs have been arranged to permit student participation in the many interesting inspection trips and technical programs. The entertainment and ladies programs have been planned to offer many items of interest to students.

INSPECTION TRIPS

Several interesting inspection trips have been planned for the meeting. These include tours of the McNary Dam and Powerhouse on the Columbia River, the Ice Harbor Dam construction on the Snake River, and the 230 KV Midway Substation.

Members registering for the Pacific General Meeting are also asked to register in advance for these trips since the number of persons who can be accommodated on each trip is limited. In making trip reservations members should furnish names, nationalities, and business connections. Fees will be collected at the Registration Desk when tickets are picked up at the meeting headquarters.

Proof of United States citizenship will be required for the McNary Powerhouse and Midway Substation trips, and members should be prepared to comply with security regulations such as are in effect at the time of the meeting.

McNary Dam and Powerhouse, Thursday, August 29, 1957, 8:00 A.M. to 12:00 noon. A forty-two mile trip by chartered buses will be made to one of the great hydro-electric installations of the Northwest located on the Columbia River at Umatilla, Oregon. Outstanding features include the powerhouse, 1,422 feet in length with 980 megawatts installed capacity, the spillway for 1,368,000 cu. ft. per second at normal pool, the 92 foot single lift navigation lock and fish ladders for salmon migration to the headwaters of the Columbia and Snake Rivers. Ticket: \$2.50.

Ice Harbor Dam Construction and Phillips Pacific Chemical Company Plant, Thursday, August 29, 1957, 3:00 P.M. to 5:00 P.M. Visitors will have a choice of two short inspection trips: (1) Six miles from Pasco to see the early stages of Ice Harbor Dam construction, a hydro-electric dam and powerhouse which will eventually rival other large installations in the Northwest power system; (2) Nine miles from Pasco to see a chemical plant installation for the manufacture of anhydrous ammonia which was completed this spring. Ticket: \$1.00 each trip.

Midway Substation and Hanford Works Area Tour, Friday, August 30, 1957, 8:00 A.M. to 2:00 P.M. A trip by chartered buses to the Midway Substation. The buses will travel through the Hanford Works barricaded area giving an opportunity to see these important Atomic Energy Commission installations. Groups will stay aboard the buses; however, stops will be made at various reactors and chemical separation areas to enable guides to discuss process steps.

The Midway Substation is the hub of the Bonneville Power Administration main transmission grid, interconnecting Grand Coulee, Bonneville, and The Dalles Dams and the central Washington load areas. Because of Midway's strategic location and the number of interconnections, involving nearly a million kilowatts, it is extremely important from a system stability standpoint. Lunch will be served at Midway. Buses returning to Pasco will again pass through the Hanford area, but by a different route from that of the outgoing trip. Ticket: \$5.00.

We suggest that members traveling to this Pacific General Meeting by private automobile may well combine it with a pleasant vacation trip and use the opportunity to visit other important Pacific Northwest developments, such as the Grand Coulee and the Dalles dams on the Columbia River and the Kaiser Aluminum Plant near Spokane, Washington.

COMMITTEE

The Pacific General Meeting committee chairmen are: Owen W. Hurd, General Chairman; H. A. Carlberg, Vice Chairman; S. M. Rhyneer, Secretary; W. J. Dowis, Technical Program, H. A. Broderston, Transportation and Inspection Trips; D. W. McLeneagan, Students, Mrs. C. R. Bergdahl, Ladies; R. B. Britton, Entertainment; L. P. Reinig, Registration; F. P. Robinson, Hotels and Motels; F. J. Mollerus, Finance, and R. C. Hoffman, Publicity.

Issued by

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

33 West 39th Street, New York 18, N. Y.

Printed in U.S.A.