

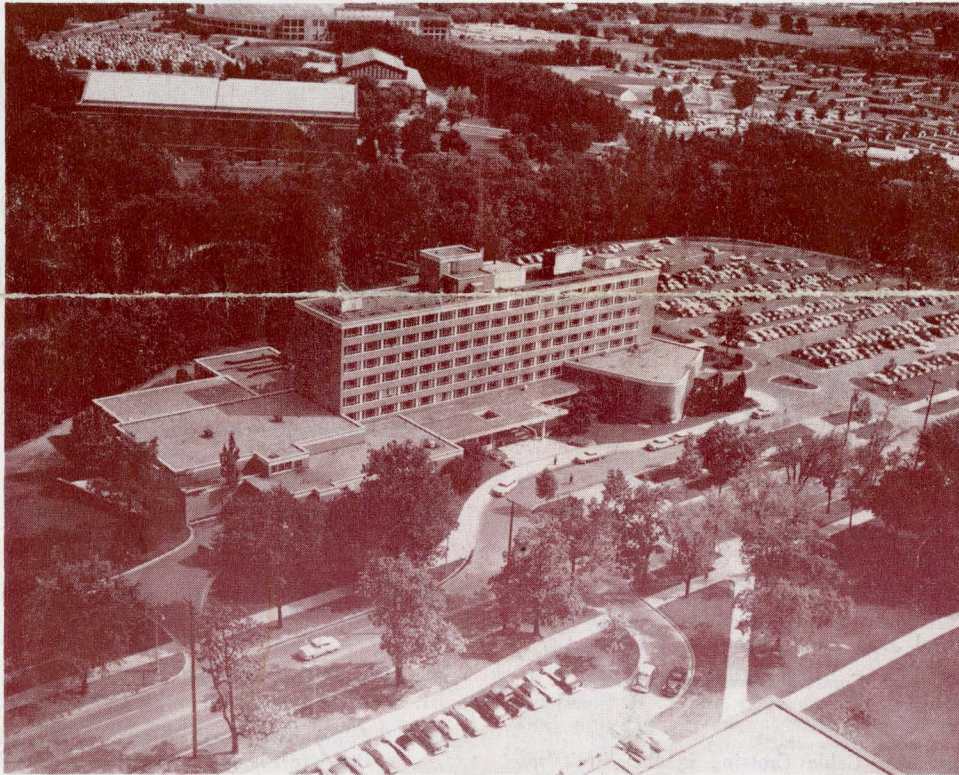


# GREAT LAKES DISTRICT MEETING

## May 5-7, 1958

### East Lansing, Michigan

Headquarters  
Kellogg Center  
Michigan State University



Kellogg Center

The 1958 Great Lakes District Meeting will be held May 5-7 at the Kellogg Center for Continuing Education on the Michigan State University Campus. All meetings, luncheons and dinners will be held in the Kellogg Center which is a modern, well planned conference center complete with living accommodations.

The General Session will be held Monday evening, May 5 at 7:30 P.M. at which time Dr. John D. Ryder will be the principal speaker. Vice-President J. H. Foote will preside.

The excellent, varied, technical program which has been arranged includes several papers by authors who have not written papers before which should provide new and interesting ideas and information.

The ladies will find this meeting, which has for a background the beautiful Michigan State University Campus, interesting and especially pleasant. Michigan in May, in a youthful, clean, country-like atmosphere will be an experience long remembered.

#### REGISTRATION

Registration will take place from 4 to 6 P.M. at the Kellogg Center Conference Desk on Sunday and will continue throughout the meeting starting at 8:00 A. M. each day. Please return the advance registration card indicating the activities in which you plan to participate to insure your getting a ticket. This will enable the committee to prepare in advance a packet containing tickets to all the events you plan to attend. All fees will be collected at the registration desk. Do not enclose remittances with the advance registration. AIEE registration fee is \$3.00 for members and \$5.00 for non-members. There is no registration fee for student members and families of members.

#### LIVING ACCOMMODATIONS

Headquarters for the meeting will be the Kellogg Center for Continuing Education located at the corner of Harrison Road and Michigan Avenue (M-43) on the Michigan State University Campus.

There is ample parking space in the Kellogg Center lot and directly across the street from the Kellogg Center.

The Kellogg Center has 125 double rooms available for Sunday evening and 140 double rooms for Monday and Tuesday evenings. The rate is \$4.25 for a twin bed room per person per night. In order to accommodate the maximum number of conference guests, it may be necessary for you to share a twin bed room with another member of the conference group. If you do not share a room, the single rate of \$7.50 per night will apply. Send room requests to: AIEE Great Lakes District Meeting, Kellogg Center for Continuing Education, Michigan State University, East Lansing, Michigan. Indicate your preference to share a room or have a private room and advise arrival and departure times. Reservations will be confirmed by the Kellogg Center.

Those who cannot be accommodated at the Kellogg Center will be referred to a hotel in Lansing by the committee. If you have a hotel preference, indicate this preference. The hotel will confirm the reservation. Hotels available are:

Hotel Olds	— \$5.00 and up for single
(Lansing)	\$7.50 and up for double
	\$9.00 and up for twin
Hotel Porter	— \$4.25 - \$6 for single
(Lansing)	\$8 & \$9 for double
Hotel Roosevelt	— \$4.50 and up for single
(Lansing)	\$7.00 for double

For those who prefer motels the following may be contacted directly for reservations:

Chad's Manor Motel—2½ miles east of E. Lansing on U.S. 16  
Winslow's Family Motel—5 miles east of E. Lansing on U.S. 16  
Motel Topper—1 mile east of E. Lansing on U.S. 16

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# AIEE GREAT LAKES DISTRICT MEETING - PROGRAM - East Lansing, Michigan, May 5-7, 1958

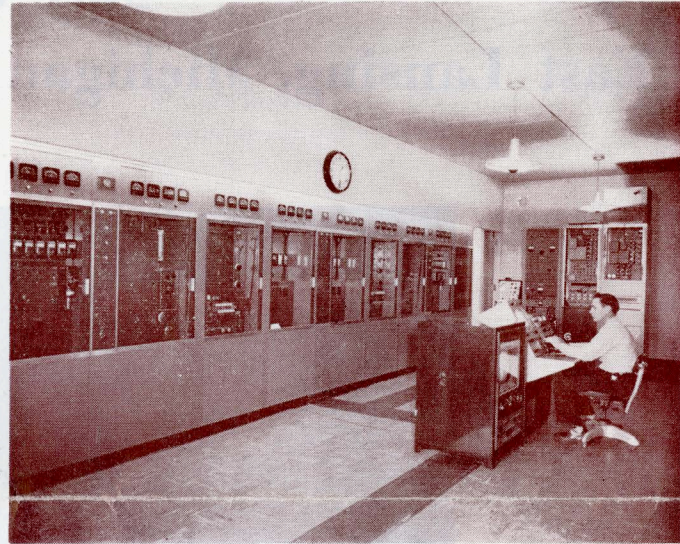
## ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40c each (80c 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 District Papers (DP.\*) 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.

Note: The TRANSACTIONS papers will be printed in the bimonthly publications as follows:

- I. COMMUNICATIONS AND ELECTRONICS.
- II. APPLICATIONS AND INDUSTRY.
- III. POWER APPARATUS AND SYSTEMS.



Station WJIM-TV Control Room

## Monday, May 5

8:00 A.M.—Registration—Kellogg Center Conference Desk

9:00 A.M.—Power—Transmission and Distribution  
Lincoln Room A  
M. W. BALFOUR, Consumers Power Co., Presiding

DP58-508. Short-Circuit Tests on Bundled Conductors. A. L. Malmstrom, L. G. Gifford, J. O. Smith, The Detroit Edison Co.

58-509. Characteristics of Twin Conductor Arrangements. E. T. B. III. Gross, Illinois Institute of Technology and L. R. Stensland, Sargent & Lundy

58-510. The 46 Kv Submarine Cable Crossing in the Straits of III. Mackinac. J. G. Stelzer, R. W. Schwaderer, Consumers Power Co., T. F. Loraditch, Okonite Co.

DP.\* Application of 46 Kv Reclosers, C. R. French, Consumers Power Co.

9:00 A.M.—Communications I  
Lincoln Room B  
J. C. LEFFEL, Michigan Bell Telephone Co., Presiding

DP.\* A Communication System for the A.A.O.C., H. I. Ingram, Illinois Bell Telephone Co.

DP.\* General Aspects of Railroad Communications, L. J. Ritter, New York Central Railroad.

DP.\* Telephone Special Services in Metropolitan Area, Emmett C. Carlson, Illinois Bell Telephone Co.

DP.\* General Telephone Company Application of Automatic Timing and Ticketing (SATT) for Toll Calls, B. F. Robinson, General Telephone Co.

9:00 A.M.—Industry  
Room 103  
B. J. DRUMMOND, Chrysler Corp., Presiding

DP.\* Static and Proximity Control in the Automotive Industry, C. Paris and K. Sheffer, Ford Motor Co.

DP.\* Induction and Dielectric Heating, C. F. Hauri, General Motors Corp.

DP.\* Electrical Circuitry of Noise and Vibration Dynamometer, M. Patterson, Chrysler Corp. and R. E. Conner, Westinghouse Electric Corp.

DP58-511. Protecting Tomorrow's Circuits Today. N. Shackman, Bulldog Electric Products Co.

12:00 Noon—Luncheon  
Big Ten Room  
H. HESS, Wayne State University, Presiding

DP.\* A Scientific Tour of Soviet Russia—Dr. W. Crawford Dunlap, Jr., Bendix Research Laboratories.

2:00 P.M.—Power—Generation and Systems  
Lincoln Room A  
A. P. FUGILL, The Detroit Edison Co., Presiding

58-512. Bay Shore Generating Station—An Analysis of Specific Electrical Features, R. May, C. M. Gardam, Toledo Edison Co.

DP.\* Powerhouse Auxiliary Systems for Nuclear and Supercritical Pressure Plants, E. F. Kratz, Westinghouse Electric Corp.

DP.\* Determination of the Optimum Transmission Voltage, 345 Kv versus 138 Kv, R. D. Camburn and R. L. Stafford, Commonwealth Associates Inc.

DP.\* Consumers Power Probes 345 Kv, H. F. Small and J. M. Brager, Consumers Power Company.

58-513. Improved Method of Interconnecting Transmission Loss Formulas, A. F. Glimm and L. K. Kirchmayer, General Electric Co.; J. J. Skiles, University of Wisconsin.

2:00 P.M.—Communications II  
Room 103  
J. C. LEFFEL, Michigan Bell Telephone Co., Presiding

DP.\* Florida-Cuba Over-the-Horizon System, Marvin C. Gehring, American Telephone and Telegraph Co.

DP.\* Public Air-Ground Telephone Service Trial, L. M. Augustus, Michigan Bell Telephone Co.

DP.\* Operation of ON over K Carrier, J. W. Korte, Northwestern Bell Telephone Co.

DP58-514. Overmodulation of a Carrier by Sine Wave and Gaussian Noise, D. R. Rothschild, University of Michigan.

2:00 P.M.—Education  
Lincoln Room B  
A. R. HELLWARTH, The Detroit Edison Co., Presiding

DP.\* Can An Electric Power Company Afford a College-Trained Engineer?, J. H. Lampe, North Carolina State College.

DP.\* The Electric Power Industry's Stake in Engineering Education, J. S. Johnson, Wayne State University.

DP.\* What Is the Engineer's Horizon in the Electric Power Business?, G. A. Porter, The Detroit Edison Co.

6:00 P.M.—Dinner  
Big Ten Room

7:30 P.M.—General Session  
Auditorium  
J. H. FOOTE, Vice President, AIEE Great Lakes District, Presiding

DP.\* Missiles and Manpower—Dr. John D. Ryder, Dean, College of Engineering, Michigan State Univ.

## Tuesday, May 6

8:00 A.M.—Registration—Kellogg Center Conference Desk

9:00 A.M.—Electrochemical  
Lincoln Room A  
F. M. BAXANDALL, Dow Chemical Co., Presiding

DP58-515. Sources of D.C. Power for Electro Chemical Application, W. A. Stelzer, Dow Chemical Co.

DP.\* D-C Current Regulation of Rectifiers for Chlorine Plants C. Retting & J. P. Smith, General Electric Co.; J. S. Marr, Wyandotte Chemicals Corp.

58-516. Design Features of Large Semi-Conductor Rectifiers, I. K. II. Dortort, I-T-E Circuit Breaker Co.

9:00 A.M.—Substations and Equipment  
Lincoln Room B  
E. ZAVITZ, The Detroit Edison Co., Presiding

DP.\* Modular Structural Member Design for Substations, R. C. Adler, J. T. Henderson, J. M. Waters, Commonwealth Associates Inc.

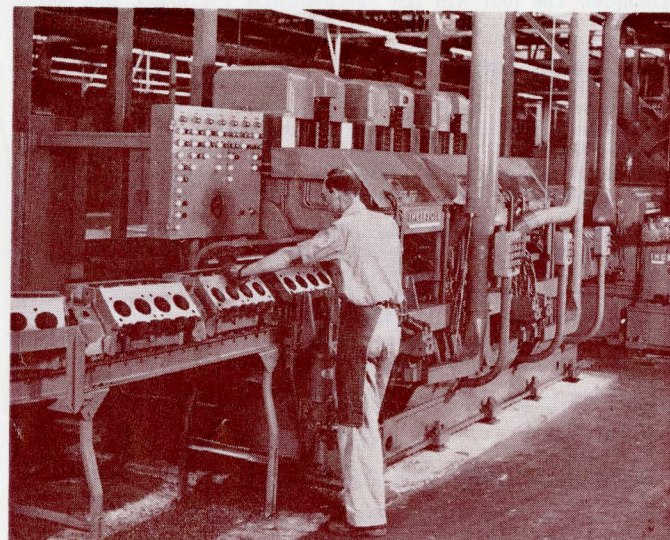
DP.\* Placement of Lightning Arresters in Substations, D. Burk, A. H. Knable, Allis-Chalmers Mfg. Co.

DP58-517. A Steel Transformer Enclosure for Noise Attenuation, R. D. Hillier & B. H. Schneider, The Detroit Edison Co.

DP58-518. Double Bus Distribution Substations, J. G. Spath & J. B. Oliver, The Detroit Edison Co.

9:00 A.M.—Electronics  
Room 103  
H. S. MIKA, Ford Motor Company, Presiding

DP58-519. Increasing the Effective Dynamic Range of a Radar, K. M. Siegel, University of Michigan.



Oldsmobile Engine Block Line

DP58-521. Analysis of An Oscillating Detector, H. Burr & A. Naylor, University of Michigan.

DP58-522. Panoramic Receiver Simulator, B. Hazeltine, University of Michigan.

DP58-523. Power and Distortion in Transistor Amplifiers, J. D. Horgan, Marquette University.

12:00 Noon—Luncheon  
Big Ten Room  
DR. L. W. VON TERSH, Michigan State University, Presiding  
"Address" Dr. I. Travis, Vice-Pres., Burroughs Corp.  
Awarding of Student Paper Prizes

2:00 P.M.—Industrial Application  
Lincoln Room A  
F. VON VOIGTLANDER, Cummins & Barnard, Inc., Presiding

DP.\* Polyphase Motor Selection for Duty Cycle Applications, G. C. Morris, Howell Electric Motors Co.

DP.\* Qualitative Description of Inertial Guidance Principles, W. H. Holl, B. P. Miller and C. F. Vondra, AC Spark Plug Division, General Motors Corp.

DP.\* Design Considerations for Surface Measuring Equipment, K. R. Morris, Micrometrical Development Corp.

DP58-524. Overvoltage Protection and Maintenance Testing of A-C Rotating Machines, H. R. Armstrong and J. E. Mulavey, The Detroit Edison Co.

2:00 P.M.—Basic Sciences I  
Lincoln Room B  
J. J. CAREY, University of Michigan, Presiding

DP58-525. A Four Dimensional Curve Tracer, W. F. Clark, University of Detroit.

DP58-526. A Simplified Solution of Coupled Circuits, T. Janisz and A. A. Toppeto, University of Detroit.

DP58-528. The Electrical Production of a Mathematical Ellipse, E. B. Kurtz, State University of Iowa.

DP58-529. Electromechanical Impedance, Analogs and Duality, W. B. Swift, University of Wisconsin.

2:00 P.M.—Automotive Auxiliaries  
Room 103  
C. R. JACOBSEN, Commonwealth Associates Inc., Presiding

DP.\* Application of Practical Optics for Auto Lighting, P. J. Blinkild, Chrysler Corporation.

DP58-530. Design Considerations for An Engine-Generator Unit for Public Utility Line Construction Trucks, H. J. Wurth, Commonwealth Associates Inc.

DP.\* A System for the Production of a Pulsating X-Ray Beam, A. J. Gioia, General Motors Corp.

6:00 P.M.—Banquet  
Big Ten Room  
DR. J. A. STRELZOFF, Michigan State University, Presiding  
"Address" J. H. Campbell, Senior Vice Pres., Consumers Power Co.

State Singers, Michigan State University  
Richard Klausli, Director

## Wednesday, May 7

9:00 A.M.—Nuclear Developments  
Lincoln Room A  
J. F. ANDERSON, Power Reactor Development Co., Presiding

DP.\* Auxiliary Power Design Considerations for a Nuclear Power Plant, S. Tjepkema, Commonwealth Associates Inc.

1686  
1672

- DP.\* Nuclear Instrumentation for Reactors, C. W. Ricker and W. Kerr, University of Michigan.
- DP.\* Instrumentation Adequate to Insure Health and Safety Around a Power Reactor, G. Hoyt Whipple, University of Michigan.
- DP.\* Nuclear Plant Control System Study, R. A. Thomas, Atomic Power Development Associates and S. Irwin of Holley Carburetor Co.

DP58-531. Electrical Engineering Aspects of the Enrico Fermi Atomic Power Plant, R. H. Logue, Power Reactor Development Co.

1691

DP.\* The Design of a Pile Oscillator for the Ford Nuclear Reactor, J. T. Stone and W. Kerr, University of Michigan.

**9:00 A.M.—Computers—Analog and Digital**

Lincoln Room B

**D. C. HARKER**, Commonwealth Associates Inc., Presiding

DP.\* Some Digital Techniques Applied to Analog Computation, R. Gaskill, Ford Motor Co.

DP58-601. Power System Demonstration Equipment for Educational Purposes, L. F. Stauder, Notre Dame University.

1684

DP.\* The Calculation of the Electric Field Energy of Moving Charged Particles, Richard J. Reid, Michigan State University.

DP.\* Some Operational Problems in Analog Computers, M. A. Melehy, Michigan State University.

**9:00 A.M.—Basic Sciences II**

Room 103

**J. J. CAREY**, University of Michigan, Presiding

DP58-532. Measurement of the Scattering Matrix with an Intervening Ionosphere, H. Brysk, University of Michigan.

58-533. A Constant-Amplitude Random Function Generator, G. A. I. Hellwarth, University of Michigan.

DP58-534. Spinning Disc Random Selectors, G. A. Roberts, University of Michigan.

DP58-535. Synthesis of Lossless Networks for Prescribed Transfer Impedances between Several Current Sources and a Single Resistive Load, A. B. Macnee, University of Michigan.

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**LUNCHEONS AND DINNERS**

The luncheon and dinner activities are listed in the program. All meals will be served at the Kellogg Center which is noted for its fine cuisine at very reasonable prices. The luncheons on Monday and Tuesday are \$2.00 each. The Monday evening dinner is \$3.65 each. The Tuesday banquet is \$4.25. Tickets are available at the registration desk and advance registration will be greatly appreciated.

**STUDENT PROGRAM**

The student program will consist of the District 5 Student Branch Paper Competition which will be held on Monday from 8:45 A.M. to 4:00 P.M. Student accommodations will be at Emmons Hall and the room rate will be \$3.00 per person for the first night and \$2.00 per person the second night or \$5.00 for both nights. Reservations should be addressed to the Kellogg Center indicating student accommodations are desired.

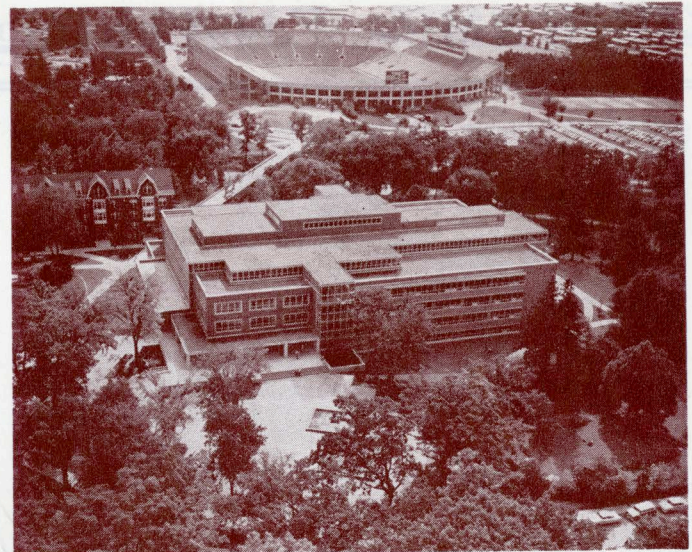
The awarding of the student paper competition prizes will be a feature of the Tuesday luncheon.

Students are cordially invited to attend all luncheons and dinners.

**LADIES ACTIVITIES**

The Ladies Activities Committee has planned a full, interesting, and different, yet relaxing and pleasant program for the ladies.

Each morning will begin with a coffee hour from 9:00 to 10:00 A.M. at the Kellogg Center. On Monday morning at 10:00 A.M. there will be a special tour of the campus by bus. This tour will feature items of special interest to the ladies. The bus will deliver the ladies to the Student Union for lunch and a short talk and then return to the Kellogg Center. Price including tour and lunch—\$2.50.



Michigan State University Library

The afternoon will be free for strolling about the beautiful campus and shopping in the nearby campus shops. Dinner will be with the men at the Kellogg Center.

Tuesday morning after coffee hour is free time with individual trips to be arranged. Luncheon and bridge at the Walnut Hills Country Club is arranged for the afternoon. Busses will leave from the Kellogg Center at 11:30 A.M. Price of ticket including lunch, bridge, and transportation is \$3.75.

Dinner and program on Tuesday evening will be with the men.

**INSPECTION TRIPS**

The committee advises advance registration for all inspection trips to assure availability of transportation.

There will be campus tours leaving from the Kellogg Center as follows:

- Monday, 9:30 A.M.
  - Monday, 10:00 A.M. (Ladies only—includes lunch)
  - Tuesday, 9:30 A.M.
  - Tuesday, 10:00 A.M. (Students)
- Cost of campus tours is thirty-five cents.

**Monday, 1:40 P.M.—Television Station, WJIM**

Busses will leave Kellogg Center at 1:40 P.M. for a tour of television station WJIM-TV located in their new Country House. This is a modern station using the latest high power televising techniques. The tour will last approximately 1½ hours. Bus cost—75 cents.

**Tuesday, 9:00 A.M.**

Busses will leave Kellogg Center at 9:00 A.M. for an inspection trip to the Oldsmobile Division of General Motors in Lansing. The trip will include a visit to the "Rocket" engine line, the motor parts plant, pressed metal plant, and final car assembly. Trip requires about 90 minutes. No cameras permitted. Bus cost—\$1.00.

**Members of the Great Lakes District Meeting Committee are:** General Chairman, J. A. Strelzoff; Technical Program—M. Westrate; Ladies Activities—Mrs. J. D. Ryder; Inspection Trips—M. B. Rann; Finance—A. W. Rauth; Dinners—K. Norris; Speakers—T. W. Culpepper; Registration—B. K. Osborn; Transportation—H. G. Hedges; Hotel—W. C. Peterson; Student Activities—M. A. Melehy; Contact—W. R. Carlyon; Publicity—J. J. Fredrickson.

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