

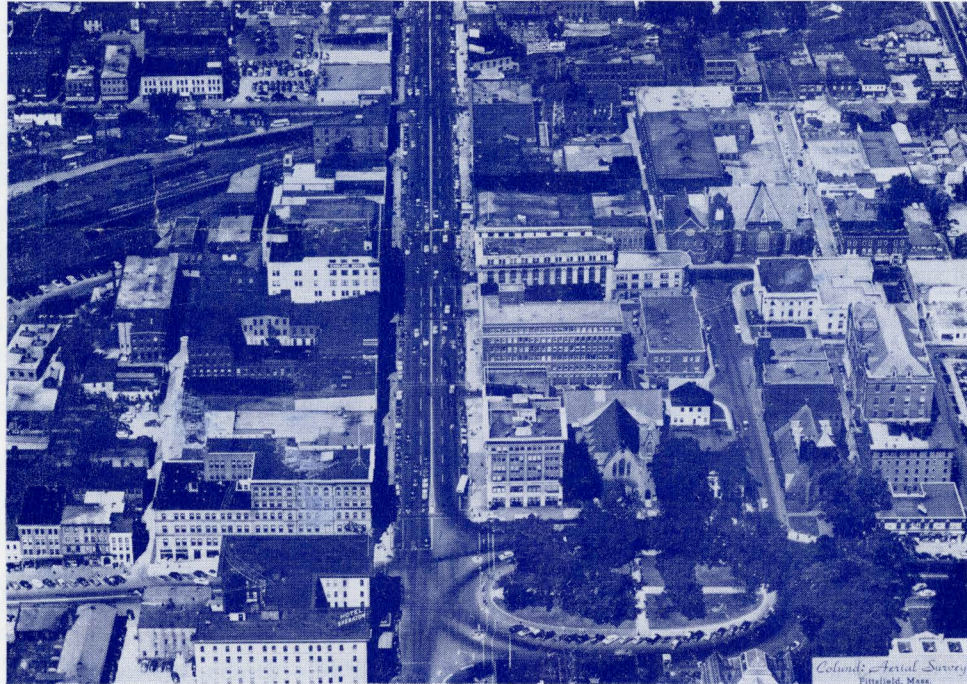
WELCOME TO PITTSFIELD

Scene of the 1957 Northeastern District AIEE Meeting



PITTSFIELD, MASSACHUSETTS
MAY 1 - 3, 1957

HEADQUARTERS
WENDELL-SHERWOOD HOTEL



Pittsfield, Massachusetts

*Columbi's Aerial Survey
Pittsfield, Mass.*

Engineering—Industrial Revolution (E=IR), the theme of this Northeastern District Meeting exemplifies the role of the engineer in the Industrial Revolution which presently is reshaping the course of industry.

The papers to be presented in this three-day meeting emphasize the importance of electrical engineering to this upsurging technical growth. A total of ten challenging subjects are covered in the 17 technical sessions.

WELCOMING LUNCHEON

At the welcoming luncheon, 12:00 noon, Wednesday, May 1, the featured guest speaker will be Mr. Howard J. Cadwell, President of the Western Massachusetts Electric Company, who will discuss the development of New England's first Atomic Power Plant at Rowe, Massachusetts. The title of Mr. Caldwell's address will be "The Economic Implications of the Yankee Development."

REGISTRATION

The registration desk will be staffed each day for registration, sale of tickets, sale of numbered papers, and general information, according to the following schedule:

Tuesday, April 30	5:00 p.m.—9:00 p.m.
Wednesday and Thursday, May 1-2	8:00 a.m.—6:00 p.m.
Friday, May 3	8:00 a.m.—2:00 p.m.

SOCIAL CALENDAR

Wednesday, May 1

For the Ladies

9:30 a.m. to 11:00 a.m.—Get acquainted coffee hour—Suite III.
12:30 p.m.—A trip to Williamstown, with guided tour through the beautiful new Sterling and Francine Clark Art Institute. Transportation will leave the hotel at 12:30.

For the Men

5:30 p.m. to 6:30 p.m.—Get acquainted cocktail hour—Ballroom

For the Ladies and Men

8:30 p.m.—Tri-Sectional competition, papers presented by members of Pittsfield and Lynn, Massachusetts and Schenectady, New York AIEE Sections—Ballroom.

Thursday, May 2

For the Ladies

9:30 a.m.—11:00 a.m.—Informal coffee hour. Suite III.

12:30 p.m.—Luncheon and Bridge at the Pittsfield Country Club. Transportation will leave the hotel at 12:30—Tickets at the Registration desk.

For the Ladies and Men

6:00 p.m. to 12:00 midnight—An evening of pleasure consisting of:
Cocktails at 6:00.
Dinner at 7:00.
Dancing from 9:00 to 12:00.
All in the Ballroom—Dress Informal. Tickets at the registration desk.

Friday, May 3

For the Ladies

9:30 a.m. to 11:00 a.m.—Farewell coffee hour—Suite III.

STUDENT ACTIVITIES

Student members of AIEE are invited to attend the presentation of student prize papers Friday morning, the Students' Luncheon Friday noon, and the Friday afternoon inspection trip to the General Electric Company.

INSPECTION TRIPS

Four inspection trips, covering three Berkshire Industries will be conducted for the delegates. For each trip, buses will leave the hotel at the designated time.

Thursday, May 2

Crane and Company, Dalton—9:15 a.m.

Since 1801, Crane and Company has been making fine papers from the choicest materials—cotton and linen fibers. One of the Crane

Continued on page 4

AIEE NORTH EASTERN DISTRICT MEETING - PROGRAM - Pittsfield, Mass., May 1-3, 1957

Wednesday, May 1

9:30 A.M.—Transformers

Georgian Room
Presiding: J. R. MEADOR, General Electric Co.

- DP.* The Application of Transformers with the Insulation Level Reduced Two Classes. J. M. Clayton, Westinghouse Electric Corporation.
- DP.* The Effect of Oil Preservation Methods on the Dielectric Strength of Oil. R. B. Kaufman, J. L. Peirce, E. R. Uhlig, and R. J. Ringlee, General Electric Company.
- DP.* A Way to Get Low Sound Levels in Large Power Transformers — Preambled Enclosures. M. W. Schulz and W. J. McNutt, General Electric Company.

DP57-530. Orthomagnetic Current Transformer for Laboratory and Factory Testing. L. W. Marks and G. Camilli, General Electric Company.

9:30 A.M.—Instrumentation

Suite 103
Presiding: E. E. LYNCH, General Electric Co., West Lynn

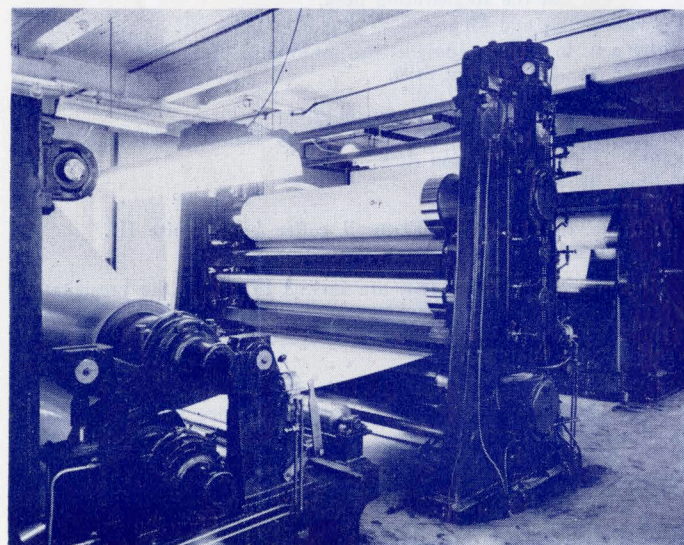
- DP.* A New Impulse Generator for Cable Testing. P. H. Ware and M. J. Koulopoulos, Simplex Wire and Cable Company.
- 56-899. Precise Determination of the Watthour. L. E. Janetos and J. J. Hall, General Electric Company.
- DP57-556. Instrumentation for Nuclear Power Plants. R. C. Fought, Jr., General Electric Company.
- 57-407. Solid-State Neutron-Flux Measuring System. T. S. Gray, W. M. Grim, Jr., F. S. Replogle and R. H. Spencer, Massachusetts Institute of Technology.

DP57-566. Speed Measurement Recorders for Precision Mill Drives. D. R. Hyer, General Electric Company.

9:30 A.M.—Industrial Electronics and Controls

Sherwood Room
Presiding: HAROLD CHESTNUT, General Electric Co.

- DP.* The Economic and Technical Aspects of Industrial Electronics. Dr. E. D. Cook, General Electric Co.



Crane and Company—making fine writing paper.

DP.* A Self-Balancing Core-Loss Bridge. A. H. Foley, General Electric Company.

DP57-563. Feedback Control Principles for Industrial Drives. C. G. Helmick, Westinghouse Electric Corporation.

DP57-578. Servo Control System for a Large Optical Tracking Instrument. Morton Mehr, Perkin-Elmer Corporation (Illustrated by moving pictures.)

12:00 Noon—Welcoming Luncheon

Ballroom
Chairman: J. O. SWEENEY, General Electric Company

Guest Speaker—Mr. Howard J. Cadwell, President Western Massachusetts Electric Co.

2:00 P.M.—Transmission and Distribution

Georgian Room
Presiding: I. B. JOHNSON, General Electric Company

DP57-531. 12.47 KV Distribution in Southern New England. Paul S. Shelton, Narragansett Electric Company.

DP57-532. The French 380 KV System Measurement of Corona Losses on Transmission Lines under Normal Operating Conditions. Francois M. Cahen and Jean M. Carteron, Electricite de France, Paris, France.

DP57-533. Some Aspects of Surface Voltage Gradient on Power Transmission Lines. H. B. Dwight, Massachusetts Institute of Technology.

DP57-548. An Approximate Transient Solution of the Tapered Transmission Line. L. O. Barthold, General Electric Company.

2:00 P.M.—Instrumentation

Suite 103
Presiding: T. R. WALTERS, General Electric Company

DP57-582. Electrical Interfacial Tensiometer. E. H. Povey, Doble Engineering Company.

DP57-534. A Fast Null-Balance Electronic Recorder. W. McAdam, C. E. Miller and J. H. Moore, Leeds and Northrup Co.

DP.* Hushed Transistor Amplifier. W. K. Volkers, Millivac Instrument Corporation.

DP.* A New Approach to Audio Frequency Impedance Measurement. H. W. Lamson and I. G. Easton, General Radio Company.

2:00 P.M.—Lightning Protective Devices

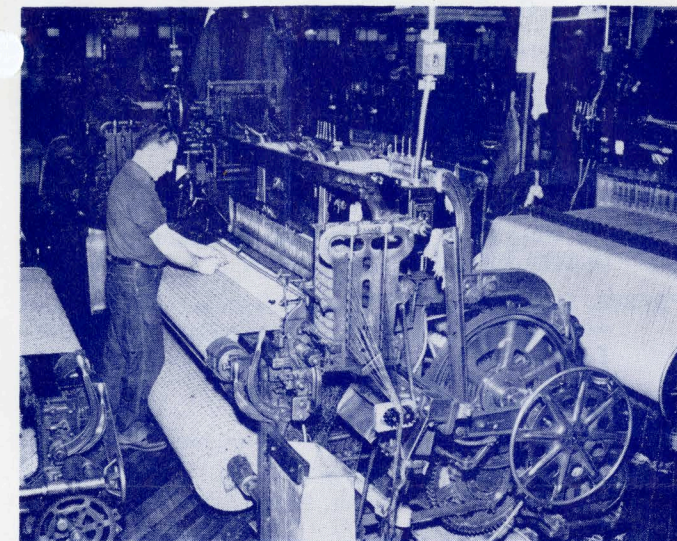
Sherwood Room
Presiding: E. M. HUNTER, General Electric Company

DP.* Location of Modern Arrester for Transformer Protection. J. K. Delson and A. J. Schultz, General Electric Company.

DP.* Lightning Protective Requirements in Extra High Voltage Stations. A. R. Hileman, Westinghouse Electric Corp.

DP57-394. The New Thyrite Magnevalve Distribution Arrester. T. J. Carpenter, E. A. Evans, G. E. Desaulniers and E. C. Sakshaug, General Electric Company.

DP.* Expanding System Requirements Indicate Need for More Severe Arrester Tests. G. Fred Lincks, General Electric Company.



Berkshire Woolen Mill—weaving tweed suit material.

Thursday, May 2

9:30 A.M.—Transmission and Distribution

Georgian Room
Presiding: J. H. HAGENGUTH, General Electric Company

DP.* 1956 Lightning Field Investigation on the OVEC 345 KV System. W. S. Price and R. H. Schломann, American Gas & Electric Service Corporation.

DP.* Field Studies of the Surge Response of a 345 KV Transmission Tower and Ground Wire. G. D. Breuer, General Electric Co.; W. S. Price and R. H. Schломann, American Gas & Electric Service Corporation; A. J. Schultz, General Electric Company.

DP.* Lightning Performance of 138 KV Twin Circuit Transmission Lines of Commonwealth Edison Company — Operating Experience and Field Studies. R. Caswell, Commonwealth Edison Company; I. B. Johnson, General Electric Company; E. Koncel, Commonwealth Edison Company; N. R. Schultz, General Electric Co.

DP.* Analytical Studies on Lightning Phenomena Involving Towers, Insulator Strings and Transmission Lines. I. B. Johnson and A. J. Schultz, General Electric Company.

DP.* Suspension Insulator Flashovers Under High Impulse Voltages. Bruce Kingsbury, General Electric Company.

9:30 A.M.—Communication and Electronics

Wendell Room
Presiding: R. P. SHEEHAN, Sprague Electric Co.

DP.* Propagation of Radio Waves via the Troposphere over Distances Far Beyond the Horizon. James F. Roche, Lincoln Laboratory, Massachusetts Institute of Technology.

DP57-574. Current Trend in High Frequency Transistors. Dr. Kurt Lehovec and R. Zuleeg, Sprague Electric Company.

DP57-536. Low-Level DC-AC Conversion. E. Keonjian and J. D. Schmidt, General Electric Company.

DP.* Review of Potential Applications of Semiconductor Devices in Television Receivers. W. F. Palmer and G. Schiess, Sylvania Electric Products, Inc.

DP.* Transistor Driven Magnetic Counters. H. N. Putschi, General Electric Company.

9:30 A.M.—Electric Heating and Air-Conditioning

Sherwood Room
Presiding: E. E. LINDEN, Narragansett Electric Co.

DP.* Application of Electrical Equipment to Railway Mobile Freezers. W. H. Kuklinski, Carrier Corporation, and D. B. Seymour, Westinghouse Electric Corporation.

DP.* Heat Pumps: Residential, Commercial and Industrial. Paul F. O'Neil, General Electric Company.

DP.* Compound Air Source Heat-Pump. H. E. Taylor and P. L. Sackett, Borg-Warner Corporation.

DP.* Heat Losses and Heat Gains in Electrically Heated Homes. J. B. C. Thomas, Hartford Electric Light Company, D. W. Rosebrugh, Connecticut Light and Power Company, and P. P. Dzubay, Connecticut Light and Power Company.

12:00 noon—Luncheon for District Executive Committee

Dining Room
Chairman: D. E. GARR, Vice President, Northeastern District

2:00 P.M.—Transmission and Distribution

Georgian Room
Presiding: J. W. BENNETT, Western Mass. Electric Co.

56-733. A New Approach to the Calculation of the Lightning Performance of Transmission Lines. C. F. Wagner, Westinghouse Electric Corporation.

DP.* Calculation of Transmission Line Lightning Voltages by Field Concepts. R. Lundholm, Goteborg, Sweden; R. B. Finn, Jr., and W. S. Price, American Gas and Electric Service Corporation.

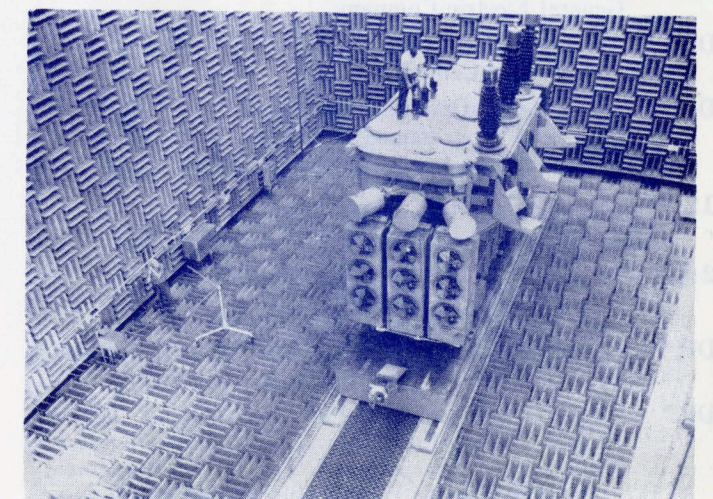
DP.* An Hypothesis Concerning Lightning Phenomena and Transmission Line Flashover. I. B. Johnson and A. J. Schultz, General Electric Company.

DP.* Factors Affecting the Lightning Performance of Transmission Lines. J. H. Hagenguth and J. G. Anderson, General Electric Company.

2:00 P.M.—Survey of Computers and Their Application

Wendell Room
Presiding: P. A. ABETTI, General Electric Company

DP.* A Survey of Engineering Applications of Digital Computers. R. Habermann, General Electric Company.



Anechoic Chamber, G. E. Sound Laboratory

DP57-562. Progress in Computing. E. L. Harder, Westinghouse Electric Corporation.

DP57-538. Analog and Digital Computers in the French Electric Power Production, Transmission and Distribution Industry. Jean M. Carteron and Francois M. Cahen, Electricite de France.

DP.* Application of Computers to Business Systems. M. E. Salverson, General Electric Company.

2:00 P.M.—Electric Heating and Air Conditioning

Sherwood Room

Presiding: M. V. GARDNER, New England Power Service Co.

DP.* Home Heating with Imbedded Wires. R. C. Cressman, General Electric Company.

DP.* Electric Space Heating and Cooling by Storage of Heated or Chilled Water. J. M. Turnbull and G. C. Jamison, Western Massachusetts Electric Company.

DP57-546. Operating Costs of an Electrically Heated School. R. L. Boyd, Electromode Division, Commercial Controls Corporation.

DP57-539. Heat-Pump and Heating-Cables Installed in the Same Residence for Data Purposes. C. W. Jones and E. E. Linden, The Narragansett Electric Company.

Friday, May 3

8:00 A.M.—Student Counselor's Breakfast

Dining Room

9:30 A.M.—Student Prize Papers

Wendell Room

Presiding: Prof. P. M. SEAL, Norwich University

9:30 A.M.—Power Generation

Suite 103

Presiding: N. E. DILLOW, General Electric Company

DP.* Application of Relays to Turbine Generators. B. L. Lloyd, Westinghouse Electric Corporation.

DP.* Steam Turbine Generators with Liquid Cooled Stators. R. C. Buell, General Electric Company.

DP.* Gas Turbine—An Economic Method of Firming Generation. W. H. Ferguson, Westinghouse Electric Corporation.

DP.* Application of Gas Turbines for Peak Loads. H. A. Carlson, J. F. Hill and W. D. Marsh, General Electric Company.

9:30 A.M.—Programming and Engineering Applications of Digital Computers

Sherwood Room

Presiding: J. B. COOPER

DP57-540. An Application of a Digital Computer to Electric Power Distribution Systems Economics. R. C. Ender, General Electric Company.

DP.* Automatic Programming. Miss S. G. Fleming, General Electric Company.

DP.* Three Years Operating Experience with the Pittsfield Card Programmed Calculator. H. J. Mason and S. B. Williams, General Electric Company.

12:00 noon—Students' Luncheon

Georgian Room

Chairman: Prof. W. R. GROGAN, Worcester Polytechnic Inst.

2:00 P.M.—Nuclear Power Generation

Suite 103

Presiding: ROGER COE, New England Power Co.

DP.* Boiling Water Reactor Plants for Power Generation. D. B. Henderson, General Electric Company.

DP.* Yankee Atomic Electric Plant. G. A. Read, Yankee Atomic Electric Company; R. J. Creagan, Westinghouse Electric Corporation; and W. C. Woodman, Stone and Webster Engineering Corporation.

DP.* Effect of Nuclear Power on Future Power Systems. A. G. Mellor, General Electric Company.

2:00 P.M.—Design and Operation of Digital Computers

Sherwood Room

Presiding: W. H. COONEY, General Electric Co.

57-542. Design of Long Passive Oscilloscope Probes to Simplify Maintenance of Large Digital Computers. W. F. Santelmann and A. J. Hingston, Lincoln Laboratory, Massachusetts Institute of Technology.

DP57-543. A Short-Access Time Memory Using Two Cores per Bit. R. L. Best, Lincoln Laboratory, Massachusetts Institute of Technology.

DP57-544. Digital Computer Display Systems. B. M. Gurley, Lincoln Laboratory, Massachusetts Institute of Technology.

2:00 P.M.—Dielectrics

Wendell Room

Presiding: K. N. MATHES, General Electric Company

DP.* Prebreakdown Currents in Gases in Uniform Fields. Professor Leon H. Fisher, New York University.

DP57-545. A System of Dielectrics. C. H. Spaderna, Norton Company.

DP.* A Comparison of Today's Rubber and Rubber-Like Cable Insulation and Jackets. John K. Andrews, Collyer Insulated Wire Company.

DP.* Corona Measurements. Wendell T. Starr, General Electric Company.

DP.* Re-ignition of Short Arcs at High Pressures. Professor L. P. Winsor, Rensselaer Polytechnic Institute.

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.

Mills is the exclusive source of paper for U. S. currency. Visitors will see a model of a paper mill of 150 years ago, and the developments in the industry will be demonstrated up to the massive modern machinery in use today.

Berkshire Woolen Mill, Pittsfield—2:00 p.m.

This is a modern, medium sized mill using the latest intricate clothmaking machines. In this 'novelty' mill, visitors will see the entire process of turning raw wool into finished cloth, in a large variety of types and colors, for men's and ladies' wear.

Friday, May 3

General Electric Company, Pittsfield—9:15 a.m.

General Electric Company manufactures a vast number of products in plants of three operating divisions located in Pittsfield. These include the Power Transformer and Distribution Transformer Departments, the Missile and Ordnance Systems Department, and the Chemical Materials Department.

The highlights of Pittsfield operations to be covered in the inspection trip include the world-famous High Voltage Laboratory, the cavernous Sound Laboratory, the fabulous new 'electric brain,' and some of the manufacturing operations in the construction of giant power transformers. Special demonstrations will be provided in each of the laboratory buildings.

General Electric Company, Pittsfield—1:45 p.m.

A repetition of the morning trip for those who were involved in morning technical sessions—especially the students and counselors.

COMMITTEE

General Chairman—J. O. Sweeny; Vice-Chairman and Secretary—J. C. Russ; Treasurer and Budget Chairman—B. A. Cogbill; Advisor—H. S. Hubbard; Meetings and Papers—W. A. McMorris; Registration and Reservations—B. N. Bowers; Student Meeting—J. C. Church; Finance—F. H. Judkins; Ladies Arrangements—W. A. Williams; Publicity—R. M. Butler; Inspection Trips and Transportation—W. J. Degnan; Dinner Dance—S. B. Howard; Smorgasbord—S. C. Leonard; Exhibits—W. G. Deuring; Meeting Room Arrangements—W. F. Dripps.