



East Central and Allegheny-Ohio Valley District Meeting

April 12-14, 1960

Charleston, West Virginia

Headquarters
Daniel Boone Hotel

SCHEDULE OF EVENTS

Monday—April 11, 1960

Allegheny-Ohio Valley District Executive Committee Meeting
Welcoming Reception—8:00 P.M. - 10:00 P.M.
Registration—5:00 P.M. - 9:00 P.M.

Tuesday—April 12, 1960

Registration—8:00 A.M.
Early Bird Coffee—8:30 A.M. - 9:45 A.M.
General Session—10:00 A.M. - 12 N.
General Luncheon—12:30 P.M.
Technical Sessions—2:00 P.M.
Trip to Union Carbide Technical Center—2:00 P.M.
Ladies' Trip to State Capitol and Governor's Mansion—2:00 P.M.
Guys' and Dolls' Party—6:00 P.M.

Wednesday—April 13, 1960

Registration—8:00 A.M.
East Central District Executive Committee Meeting
Technical Sessions—9:00 A.M.
Student Prize Papers Competition—9:00 A.M.
Trip to Kaiser Aluminum—9:00 A.M.
Trip to Kanawha Power Plant—9:00 A.M.
Ladies' Trip to Blenko Glass—9:30 A.M.
Ladies' Luncheon at Engineers Club
Technical Sessions—2:00 P.M.
Student Trip to Union Carbide Technical Center—2:00 P.M.
Trip to Cannelton Coal Co.—2:00 P.M.
Social Hour—6:00 P.M.
Banquet—7:00 P.M.

Thursday—April 14, 1960

Registration—8:00 A.M.
Technical Sessions—9:00 A.M.
Trip to Owens-Illinois Glass—9:00 A.M.
Ladies' Interior Decorating Show—10:00 A.M.
Luncheon at Woodrum's Tea Room
Space Symposium—2:00 P.M.

Charleston, West Virginia will be host to a joint meeting of the East Central District 11 and the new Allegheny-Ohio Valley District 14 on April 12-14, 1960, with headquarters in the Daniel Boone Hotel. The theme of the meeting is "Industrial Wonderland—Coal, Chemicals and Power." The meeting will feature technical sessions of interest to everyone, outstanding social events and inspection trips of unusual interest.

RECEPTION: On Monday, April 11, from 8:00 P.M. to 10:00 P.M. a Welcoming Reception will be held at the Daniel Boone Hotel. This will be a social event for early arrivals. There will be no charge for this affair.

EARLY BIRD COFFEE: From 8:30 A.M. until 9:45 A.M. on Tuesday an Early Bird Coffee for all early risers will be held. West Virginia country ham and biscuits will be served. Don't miss this one; it will be well worth while. There will be no charge for this affair.

GENERAL SESSION: The General Session will be called to order at 10:00 A.M. on Tuesday by C. B. Talley, Honorary Chairman of the Joint District Meeting. His Honor, John A. Shanklin, Mayor of Charleston will welcome the visitors to Charleston. The Honorable Cecil H. Underwood, Governor of West Virginia will give an address welcoming visitors to the State of West Virginia. The principal speaker will be Raymond E. Salvati, President of the Island Creek Coal Company. He will speak about the future of coal in power generation, steel production and the chemical industry.

GENERAL LUNCHEON: A luncheon will be held following the general session on Tuesday. There will be no speaker at the luncheon. Ladies are invited.

REGISTRATION: The registration desk will be on the mezzanine in the Daniel Boone Hotel. It will be open from 5:00 P.M. to 9:00 P.M., Monday, April 11, and daily thereafter from 8:00 A.M. to 5:00 P.M.

Advance registration cards should be mailed to Gordon Hood, Allis Chalmers Mfg. Company, 506 Peoples Building, Charleston, West Virginia. The use of these cards will avoid considerable delay at the registration desk. Members will pay registration fees upon arrival when they pick up identification badges, programs, etc. The registration fees payable at the meeting will be \$4.00 for members and \$7.00 for non-members.

HOTEL RESERVATIONS: The facilities of the Daniel Boone Hotel have been reserved for the AIEE members attending this meeting. A hotel reservation and rate card is enclosed with this announcement. As indicated, it should be sent directly to the hotel. Hotel room reservations should be made as far in advance as possible. In the event of an overflow the Daniel Boone Hotel will arrange reservations at a nearby hotel. Your reservation will be confirmed by the Hotel. If assistance is needed, the Hotel Committee Chairman should be contacted. Address request to John Dennie, Hotel Committee Chairman, P. O. Box 965, Charleston, West Virginia.

Rates for rooms are as follows:

Single Room with Detached Bath	\$ 4.00 - \$ 4.50
Single Room with Bath	5.00 - 10.00
Double Room with Double Bed	9.50 - 15.00
Double Room with Twin Beds	10.50 - 15.00
Two Room Suite	21.50 - 22.50
Three Room Suite	35.00

BANQUET: A social hour and banquet for all members, wives and guests will be held at 6:00 P.M. on Wednesday, April 13. Dr. Park H. Miller, Jr., Chairman Experimental Physics Group, General Atomic Division of the General Dynamics Corporation will speak on "From the Atom to Your Home—Electric Power Generation Without Moving Parts."

GUYS AND GALS PARTY: At 6:00 P.M. on Tuesday, April 12, a party for members and wives will be held. There will be no speakers, no special tables and everything will be informal. An excellent dinner will be served, followed by a program with sufficient variety to satisfy even the most discerning.

LADIES' EVENTS: The following events should provide lots of entertainment for ladies accompanying their husbands to this meeting.

On **Tuesday** ladies are invited to attend the General Luncheon. In the afternoon a trip to the State Capitol and Governor's Mansion has been arranged. In the evening a Guys and Dolls Party will be held.

On **Wednesday** morning a trip to the Blenko Glass Company is planned. At this plant master craftsmen make exquisite glassware utilizing the ancient art of glass blowing and hand crafting. This will be followed by a luncheon. Wednesday will be climaxed by the evening social hour and banquet.

On **Thursday** morning there will be an interior decorating show and Luncheon at Woodrum's Tea Room.

Transportation to all ladies' events will be furnished at no cost.

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ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 50¢ each (\$1.00 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.



Union Carbide Corp. Technical Center

Tuesday, April 12

9:00 a.m.—Mining Industry Committee

Daniel Boone Parlor "C"

Chairman: J. A. BUSS, Reliance Electric & Engineering Company

10:00 a.m.—General Session

Shrine Mosque Auditorium

Chairman: C. B. TALLEY, Appalachian Power Company

Welcoming addresses to the visitors and the opening of the meeting by the Keynote Speaker.

2:00 p.m.—Mining Industry

Daniel Boone Main Ballroom

Chairman: J. A. ERSKINE, Eastern Gas & Fuel Associates

DP.* A Review of Mine Grounding Practices. D. E. Hamilton, General Electric Company.

DP.* Portable Silicon Rectifiers. R. G. Clark, Westinghouse Electric Corporation.

DP.* Motors for Continuous Miners. J. A. Buss, Reliance Electric & Engineering Company.

DP.* Fuel Cells. T. G. Kirkland, Allis-Chalmers Manufacturing Company.

2:00 p.m.—Cathodic Protection & Grounding

Daniel Boone Parlors "A" & "B"

Chairman: R. G. MEDLEY, Union Carbide Olefins Company

DP.* Demonstrating Electrochemical Corrosion Reactions by the use of Transparent Cells in an Optical Projector. George E. Cox, Consulting Engineer.

60-4. The effect of Electrical Grounding Systems on Underground II Corrosion and Cathodic Protection. B. Husock, Harco Corporation.

55-113. Underground Corrosion on Rural Electric Distribution Lines. O. W. Zastrow, REA U. S. Dept. of Agriculture.

2:00 p.m.—Fire Prevention in Industry

Daniel Boone Parlor "C"

Chairman: J. J. DUGGAN, Union Carbide Chemicals Company

This unusual AIEE session will feature an opening talk by the Chairman who is extremely well qualified to speak on this subject. There will also be several extemporaneous speakers from the National Fire Protection Association.

DP.* The New National Electric Code and Fire Safety. Frank Stetka, NFPA Field Engineer.

Wednesday, April 13

9:00 a.m.—Chemical Industry—Instrumentation & Data Transmission

Daniel Boone Clubroom

Chairman: G. P. JONES, C. & P. Telephone Company

DP.* Analytical Instruments for Process Control. M. D. Weiss, Union Carbide Chemicals Company.

DP.* Data Transmission Capabilities of the Telephone Network. H. R. Gravely, C. & P. Telephone Company.

DP.* Data-Phone as a Linkage in Process Control Systems. M. J. Zollner, American Telephone & Telegraph Company.

9:00 a.m.—Mining Industry

Daniel Boone Main Ballroom

Chairman: J. A. ERSKINE, Eastern Gas & Fuel Associates

DP.* Electrical Equipment for Cleaning Plants. Chester H. Paris, U. S. Steel Company.

DP.* Control of Fans and Substations by Carrier System. Femco Engineering Company.

DP.* Remote Control Highwall Mining. J. W. Heimaster, Union Carbide Olefins Company.

9:00 a.m.—Students Prize Papers

Daniel Boone Parlor "C"

Chairman: J. R. MCGINNIS, Appalachian Power Company

Six judges will determine the winning papers. Prizes will be awarded at the Wednesday evening banquet.

9:00 a.m.—Fire Prevention in Industry

Daniel Boone Parlors "A" & "B"

Chairman: J. J. DUGGAN, Union Carbide Chemicals Company

A continuation of the informal discussion from Tuesday's Session.

DP.* How the National Electric Code, the Underwriters Laboratories, and the NFPA serve the Electrical Industries. Mervin Brandon, Underwriters Laboratories.

DP.* Static and Induced Current Grounding. A. D. Colburn, Union Carbide Chemicals Company.

2:00 p.m.—Industrial Power

Daniel Boone Main Ballroom

Chairman: C. O. STEINMETZ, Union Carbide Chemicals Company

DP.* The Electrical Testing of Rubber and Plastic Insulated Power Cables. W. A. Beasley, Anaconda Wire & Cable Company.

60-138. Using the Digital Computer in Industrial Power System Design. R. F. Cook, A. D. Patton; Westinghouse Electric Corp.

DP.* Relay Protection for Large Motors. J. F. Fesler, P. E. Drake; Union Carbide Olefins & Chemicals Companies.

DP.* Static Protective Relays. N. Kreekon, Allis-Chalmers Manufacturing Company.

2:00 p.m.—Chemical Industry—Computation and Control

Daniel Boone Clubroom

Chairman: G. P. JONES, C. & P. Telephone Company

DP.* Analog Computer Models for Process Control. W. B. Field, Union Carbide Chemicals Company.

DP.* Digital Computer for Process Control. K. R. Knoblauch, Minneapolis-Honeywell.

DP.* The Role of the General Purpose Computer in Plant Maintenance. F. H. Winterkamp, E. I. duPont de Nemours and Company.

2:00 p.m.—Cathodic Protection & Grounding

Daniel Boone Parlors "A" & "B"

Chairman: R. G. MEDLEY, Union Carbide Olefins Company

DP.* Demonstration of the Theory of Cathodic Protection. W. J. Kretschmer, Columbia Gas System Service Corporation.

DP.* Grounding & Bonding. A. S. Brookes, Public Service Electric and Gas Company.

DP.* Power System and Equipment Grounding in Conformance with Cathodic Protection Practices. Parts I & II. K. R. Gosnell, R. G. Medley; Union Carbide Chemicals and Olefins Companies.

2:00 p.m.—Engineering Education

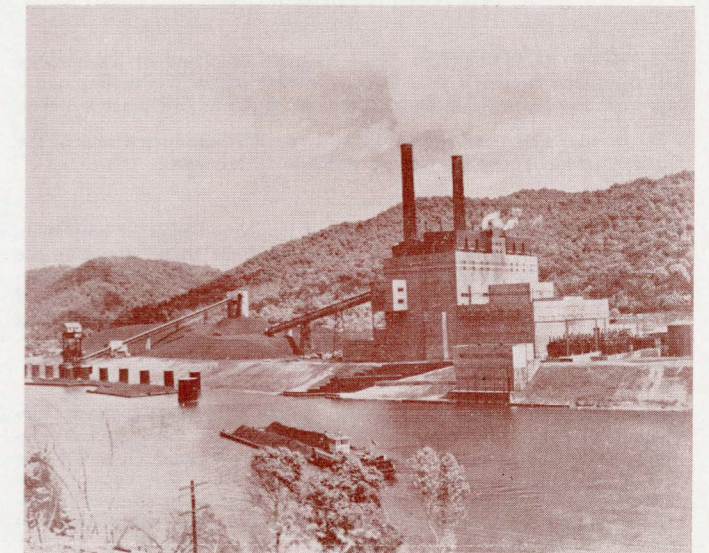
Daniel Boone Parlor "C"

Chairman: ERWIN E. DREESE, Ohio State University

DP60-594. A Program in Engineering Science for All Engineering Students. A. T. Murphy, University of Wichita.

DP.* Evolution of Electronic Components. Joseph C. Michalowicz, The Catholic University of America.

DP.* An Experience in Laboratory Education. Gordon Kent, W. Howard Card; Syracuse University.



Kanawha Plant—Appalachian Power Co.

Thursday, April 14

9:00 a.m.—Industrial Power

Daniel Boone Main Ballroom

Chairman: C. O. STEINMETZ, Union Carbide Chemicals Company

DP.* Unusual Features of the Kanawha Generating Plant. F. M. Porter, Appalachian Power Company.

DP.* Selecting an X-Ray Gauge for Measuring the Thickness of Aluminum Foil. R. W. Wall, Kaiser Aluminum & Chemical Corporation.

DP.* The Plasmarc Torch. O. H. Nestor, Linde Company.

9:00 a.m.—Engineering Education

Daniel Boone Parlor "C"

Chairman: ERWIN E. DREESE, Ohio State University

DP.* A Communications Engineering Course for a Fast Moving Technology. Carl T. Koerner, American Telephone & Telegraph Company.

DP.* Better Engineering Through Better Communications. W. M. Terry, Jr., Allis-Chalmers Manufacturing Company. Presented by D. F. Peterson.

2:00 p.m.—"Space Problems" Symposium

Shrine Mosque Auditorium

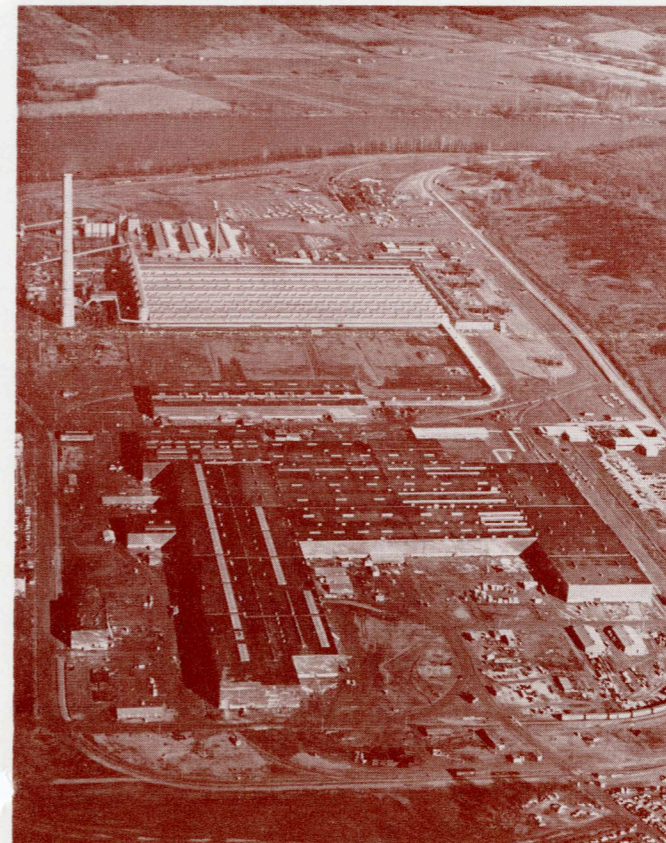
Chairman: J. L. SIMPSON, Union Carbide Chemicals Company

DP.* Radio Astronomy. F. D. Drake, National Radio Astronomy Observatory.

DP.* Space Instrumentation & Guidance. Roy Crask, Minneapolis-Honeywell.

DP.* Application of Nuclear Power to Space Problems. Sidney Krasik, Westinghouse Electric Corporation.

DP.* Space Motors & Propellants. Mark Ghai, General Electric Company.



Kaiser Aluminum's Ravenswood Works

AIEE EAST CENTRAL ALLEGHENY-OHIO VALLEY MEETING

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STUDENT ACTIVITIES: West Virginia Institute of Technology will sponsor a student's prize paper competition on Wednesday morning. Cash awards will be made to the 1st, 2nd, and 3rd place winners.

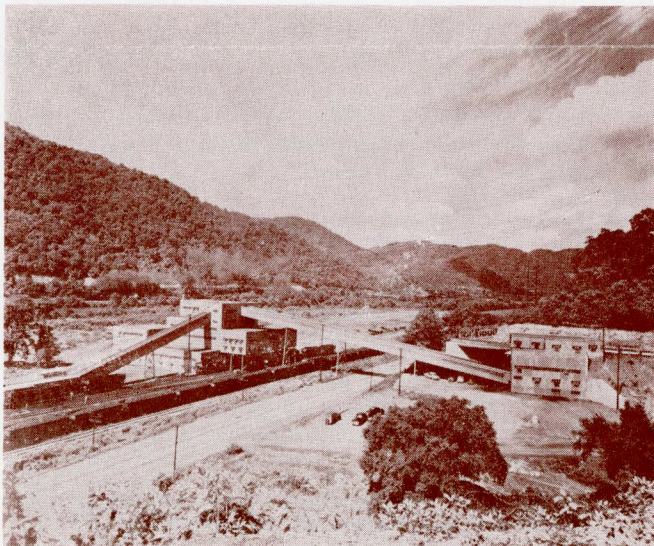
Wednesday afternoon there will be a specially conducted tour of the Union Carbide Technical Center at South Charleston.

INSPECTION TRIPS: A program of inspection trips of both technical and general interest has been arranged for those attending the meeting. Since the number of persons who may be interested in inspection trips is not known it would be appreciated if reservations would be made on the enclosed card. Tickets and information regarding inspection trips may be obtained at the registration desk. The following is a brief description of these interesting events.

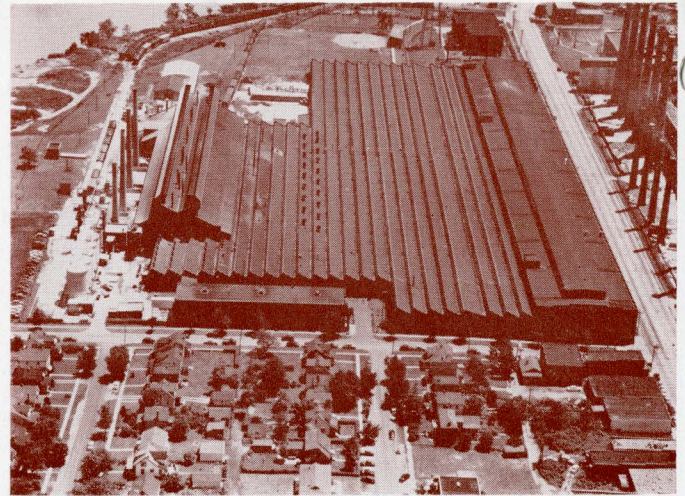
Union Carbide Technical Center, South Charleston, West Virginia—Tuesday Afternoon—April 12. Union Carbide Corporation's multi-million dollar Technical Center is located on a 400-acre plot a few miles southwest of Charleston. Here are housed joint Chemicals, Olefins, and Plastics Divisions Operations. Research, Development and Engineering Programs are also carried out at this vast facility making it one of the chemical industry's most up to date centers.

Kaiser Aluminum & Chemical Corporation, Ravenswood, West Virginia—Wednesday Morning—April 13. Kaiser Aluminum & Chemical Corporation has constructed a more than \$200-million aluminum producing and fabricating facility which is one of the largest integrated operations of its type in the nation. The Works now has a total of more than 72 acres under roof and employs some 3,000 persons. The reduction division plans call for an ultimate capacity to produce more than 440 million pounds of primary aluminum per year by an electrolytic process. Because of the nature of the reduction process, tremendous quantities of electrical energy will be consumed. To provide these requirements, Kaiser Aluminum has a 40-year contract with Ohio Power Company for 450,000 kilowatts—the largest, single, private power contract ever negotiated. The other major facility on the site is a 335-million-pound per year capacity fabricating facility in which up to 10,000-pound slabs of the aluminum from the reduction plant is rolled by giant mills into thousands of feet of sheet, foil and plate products. These slabs, or ingots, are up to 16 inches thick. The ingots are rolled under tremendous pressures through a series of mills for various products including foil which may be as little as one-quarter of a thousandth of an inch thick (.00025").

Kanawha Power Plant, Glasgow, West Virginia—Wednesday Morning—April 13. The Kanawha River Pant of the Appalachian



Coal Preparation Plant—Cannelton Coal & Coke Co.



Owens-Illinois Glass Co.

Power Company is located on the Kanawha River, about 20 miles southeast of Charleston. The plant is the eastern terminus of the 345 kv transmission system operated by the American Electric Power Company, Appalachian's parent company. It contains two 215,000-kilowatt generating units capable of producing a kilowatt-hour of electricity from about 7/10 pound of coal and has been named one of the most efficient steam power plants in the world. The plant uses over a million tons of coal a year to generate electricity.

Coal Preparation Plant, Cannelton Coal & Coke Company, Cannelton, W. Va.—Wednesday Afternoon—April 13. This coal preparation plant is among the most modern in the Kanawha Valley area and incorporates the latest in control facilities. It was particularly designed to permit accessibility to all parts of the plant and as such will lend itself to close inspection by a group. It has a capacity of 450 tons per hour of mine run coal, and also is equipped with rock handling facilities. The unit incorporates rubber-boot coupling on the main belt conveyor drives and the latest in flotation cells for fine coal cleaning and push-button panel control. This preparation plant utilizes about 1800 HP in connected load to handle the necessary equipment.

Owens-Illinois Glass Company, Charleston, West Virginia—Thursday Morning—April 14. At this plant you will see one of the largest continuous production bottle plants in the United States. Here the dies, glassware and cartons for many varieties of liquor, beer, household liquids and chemical products are made in a modern, automatic operation. Five furnaces, operating 24 hours per day, make this plant a tremendous producer of bottle glasswares.

Members of the Joint East Central and Allegheny-Ohio Valley District Meeting Committee are: C. M. Hunt, General Chairman; C. B. Talley, Honorary Chairman; L. M. Roth, Chairman-at-Large; J. H. Miller, Secretary; M. H. W. Illing, Treasurer; R. H. Hively, Advisory; W. C. McMahan, Administration; B. W. Whittington, Finance; J. C. Norton, Technical Program; J. R. McGinnis, Student Meeting; P. W. Sinsel, Special Meetings; H. L. Austin, Entertainment; G. W. Unangst, Arrangements; Z. C. White, Publicity.

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