



Pacific General Meeting

August 23-25, 1961

SALT LAKE CITY, UTAH

Headquarters
Hotel Utah

SCHEDULE OF EVENTS

August 22—TUESDAY

- Registration Begins—5:00 P.M.
- Cocktail Party—6:00 P.M.

August 23—WEDNESDAY

- Technical Sessions—9:00 A.M.
 - Reactor Instrumentation Systems
 - Mining
 - Relays
- Ladies' Hunt Breakfast—10:00 A.M.
- Men's Luncheon—12:00 Noon
- Kennecott Copper Corp. Trip—1:30 P.M.
- Technical Sessions—2:00 P.M.
 - Chemical Industry
 - Substations
 - Electrical Instruments in Biology

August 24—THURSDAY

- United States Steel Corp. Trip—9:00 A.M.
- Technical Sessions—9:00 A.M.
 - Residential Electric Heating
 - Industrial and Commercial Power Systems
 - Wire Communications
 - Materials Handling & Construction Industry
- Ladies' Coffee Hour—9:00 A.M.
- Ladies' Luncheon & Fashion Show—1:00 P.M.
- Hercules Powder Co. Trip—1:00 P.M.
- Technical Sessions—2:00 P.M.
 - Industrial and Commercial Power Systems
 - System Planning and Economics
 - Radio Communications
 - Solid State Devices
- Main Banquet—6:00 P.M.

August 25—FRIDAY

- Ladies' Coffee Hour—9:00 A.M.
- Technical Sessions—9:00 A.M.
 - Broadcasting
 - Transmission and Distribution
 - Feedback Control Systems

The 50th annual Pacific General Meeting of AIEE will feature the presentation of 61 technical papers. **Registration** will commence at 5:00 P.M. on Tuesday, August 22, 1961 at the Hotel Utah in Salt Lake City, Utah and activities will wind up on Friday, August 25. The technical sessions are being arranged by the Technical Operations Department of the Institute and will feature papers on subject matter matching the large technical diversity of Utah Industry. In the greater Salt Lake Valley there are industries varying from mining and its associated phases to manufacture and assembly of space age electronics and missiles equipment.

Remember that Utah people are noted for their friendliness and hospitality and Salt Lake City is the center of Scenic America. It is 305 miles by car to Jackson Hole, Wyoming and Yellowstone National Park. 127 miles to the famous Salt Flats; 400 miles to the Grand Canyon; 266 miles to Cedar Breaks National Monument; and 275 miles to Bryce Canyon, to mention but a few of the scenic areas about Salt Lake City. Drive to Salt Lake for the Convention and then motor to one or more of these scenic attractions on the way home. The roads are good and the speed limit is 60 miles per hour.

M. A. Bostwick, Chairman of the Pacific Coast Relay Subcommittee is scheduling a full day of discussions on relaying problems for Tuesday, August 22. These discussions will be open to members as well as the subcommittee. For further information Mr. Bostwick may be contacted at the Portland General Electric Company, Portland, Oregon.

INSPECTION TRIPS

Matching the diversity of Utah Industry, inspection trips have been arranged as follows:

Wednesday, August 23, 1:30 P.M.—Kennecott Copper Corporation—The Kennecott Copper Corporation operates complete mining, milling, smelting and refining facilities only 25 miles from downtown Salt Lake City. The Corporation's Bingham Canyon mine is generally acknowledged as the world's largest man-made excavation from which are produced nearly a half billion pounds of copper every year. Nearby at Magna, Utah is the largest copper smelter in the world and a short distance from there is the electrolytic refinery. The facilities in Utah produce about 22% of the nation's newly mined copper every year. The processing of this low grade copper ore is a high engineering achievement. Cost for this trip will be for transportation only, approximately \$1.50.

Thursday, August 24, 9:00 A.M.—United States Steel Corporation—The United States Steel Corporation's Columbia-Geneva Steel Division operates the most highly integrated steel mill west of the Mississippi River at Geneva, Utah. This facility was built in early 1940 and hence is a most modern steel facility. Since that day it has been continually expanded and modernized.

Thursday, August 24, 1:00 P.M.—Hercules Powder Company—At Bacchus, Utah not far from the Bingham Canyon mine, the Hercules Powder Company has a long established explosives plant. This facility is being expanded to cover work which is being performed by the company on the third stage of the Minute Man Missile and the second stage of the A2 Polaris Missile. Cost of this inspection trip will be approximately \$1.50 for transportation only.

SOCIAL EVENTS

With registration commencing at 5:00 P.M. in the Hotel Utah, a welcoming **Cocktail Party** is being planned for those registering, between the hours of 6:00 and 8:00 P.M., on Tuesday, August 22. On the following Wednesday, the Lafayette Ball Room of the Hotel Utah will be the location for the **Welcoming Luncheon** where the featured speaker will be Dr. C. S. Winters of the General Motors Corporation.

On Thursday, August 24, the **Main Banquet** will be held in the Hotel Utah with a cocktail hour preceding the banquet. Entertainment will be provided after the banquet.

LADIES' EVENTS

Tuesday, August 22, 5:00 P.M.—Registration—Hotel Utah, Mezzanine.
6:00-8:00 P.M.—Welcoming Cocktail Party in the Jade & Gold Room of the Hotel Utah, Mezzanine.

Wednesday, August 23, 10:00 A.M.—Hunt Breakfast at Log Haven.
Bridge and Flower Arranging scheduled for the afternoon.

Log Haven is presently one of Salt Lake's favorite dining spots, located in beautiful Mill Creek Canyon, about twelve miles East of Salt Lake City. The restaurant was formerly a private estate, rustic in construction to fit with its surrounding scenery. The ladies will thoroughly enjoy this cool mountain retreat. An unusual and delightful spot.

Buses and cars will be provided for the ladies' transportation.

Thursday, August 24, 9:00 A.M.—The ladies will meet for coffee in the Jade Room of Historic Hotel Utah, the convention headquarters.

Hotel Utah is adjacent to the famed Temple Square and a delightful shopping center. After the coffee get-together, the ladies can thoroughly enjoy the rest of the morning taking a tour of the Mormon Temple grounds or shopping, all within two blocks of the Hotel.

1:00 P.M.—The ladies will be taken to the Fort Douglas Hidden Valley Country Club for a luncheon and Fashion Show.

The country club is located high on the East bench of the city and thus provides a spectacular view of Salt Lake Valley and the Great Salt Lake.

6:00 P.M.—Cocktails will be served in the Jade Room of Hotel Utah.

7:00 P.M.—The ladies will accompany their husbands to the Banquet.

This evening will be a gala affair . . . Fine food, exceptional entertainment, and for the "young at heart," dancing.

Friday, August 25, 9:00 A.M.—The ladies will meet again for coffee in the Jade Room of the Hotel Utah.

The rest of the day will be free for sightseeing, shopping or playing. The hostesses will be happy to assist in providing the facilities and information that will afford the ladies maximum pleasure from their visit to Salt Lake.

STUDENT ACTIVITIES

Student activities are being arranged by Dr. L. D. Harris of the University of Utah for **Thursday, August 24**. There will be meetings in the afternoon for students and counselors to discuss problems of mutual interest. The **luncheon** on Thursday for students and their counselors will feature a speaker presenting a topic of interest to all participants.

SPORTS

Arrangements have been completed with the Salt Lake Country Club whereby AIEE members registered at the meeting will be able to utilize the recreational facilities of the club. Individuals will have to make their own arrangements as to swimming, tennis and golf at the Country Club.

HOTEL RESERVATIONS

Hotel and motel accommodations are available in both downtown Salt Lake City and in the suburbs.

Hotel Rates

Hotel Utah	World Motor Hotel
\$ 8.00 - \$15.00 Single	\$ 8.00 - \$10.00 Single
10.00 - 18.00 Double	12.00 Double bed
12.00 - 18.00 Twin	14.00 " "
Two-room Suites—	Suites - 2 persons \$14.00
\$20.00 - \$35.00	3 persons 16.00
	4 persons 18.00
Hotel Utah Motor Lodge	Temple Square Hotel
\$ 9.00 - \$12.00 Single	\$5.00 - \$ 7.50 Single
12.00 - 16.00 Double	7.50 - 9.50 Double
14.00 - 16.00 Twin	8.00 - 11.00 Twin
	Free parking.

The Hotel and Facilities Committee will handle reservations on a first-come first-served basis. Mr. F. O. Wald, chairman of the committee may be contacted for information and reservations, at the Utah Power and Light Company, Box 899, Salt Lake City, Utah.

REGISTRATION

The registration desk will be located on the mezzanine of the Hotel Utah. Facilities for registering will be available Tuesday beginning at 5:00 P.M. and continuing daily throughout the meeting.

For convenience, members and non-members should return the advance registration card enclosed with this announcement. Registration fees payable at the meeting are \$6 for members, \$10 for non-members and \$2 for ladies. Children and students will not be charged a fee.



Kennecott Copper Corp. Bingham Canyon Mine

PAPERS MAY BE PURCHASED

Preprints of all *numbered* papers are on sale at 50¢ each to AIEE members (\$1.00 to nonmembers).

Papers bearing *Roman numerals* will be printed in the Transactions and the bimonthly publications as follows:

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

**Asterisked papers* will be assigned numbers for sale at the same price at the meeting if copies are so provided by the authors; no further reproduction is presently scheduled.

After the meeting, all then unsold copies (including authors' papers on sale) are available by order and remittance to AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Coupon books in \$10 denominations are available by order from Headquarters to those who wish to avoid remittance by check or otherwise.

Wednesday, August 23

9:00 a.m.—Reactor Instrumentation Systems

- CP.* The Design of Nuclear Instrumentation Systems for Water Cooled Reactor Power Plants. R. Eastman, S. N. Ehrenpreis, Westinghouse Electric Corp.
- CP61-929. Design and Performance of the Dresden Station In-Core Monitor System. R. K. Baird, J. Forster, General Electric Co.
- CP61-951. Instrumenting a Sodium Cooled Reactor Power Plant for Control and Safety. E. Matlin, Atomics International.
- CP61-950. Automation Study of a Nuclear Propulsion System. R. B. Rice, General Electric Co.

9:00 a.m.—Mining

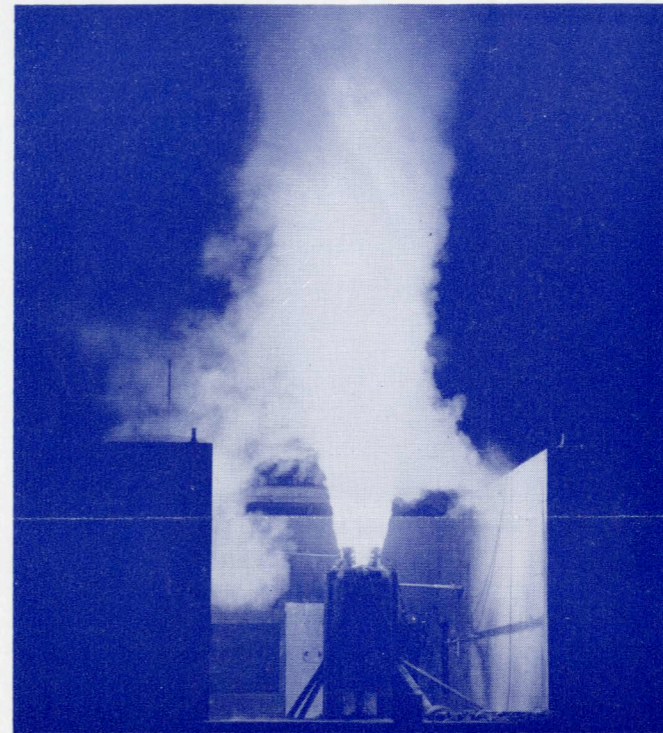
- CP.* A.C. Motors & Controls As Applied to Loading Machines. B. Harbage, Jeffrey Mfg. Co.
- CP.* Semi-Conductor Control for Excavating Equipment. A. M. Vance, Westinghouse Electric Corp.
- CP.* Electric Drive for Off-Highway Vehicles. H. J. McLean, H. Vitt, General Electric Co.

9:00 a.m.—Relays

- 61-925. Transient Voltages in Relay Control Circuits. W. K. Sonnemann, Westinghouse Electric Corp.
- 61-936. Protection of Control Circuit Rectifiers Against Surges from III D-C Coil Interruption. H. T. Seeley, General Electric Co.
- 61-935. A Static Voltage Differential Relay for Protection of Shunt III Capacitors. M. O. Tom, Bonneville Power Administration.
- 61-921. A Partial Survey of Relay Protection of Steam Driven A-C III Generators. AIEE Working Group of the Generator Protection Subcommittee of the Relays Committee, J. M. Bisbee, Chairman.

2:00 p.m.—Chemical Industry

- 61-944. Committee Report on Electrical Characteristics of Electrochemical Cell Line. AIEE W.G. of the Electrochemical Processes Sub. of the Chemical Industry Committee, R. P. Stratford, Chairman (Re-presented for Discussion only).
- CP.* Protection of Three Phase Motors Against Single Phasing. R. H. Long.
- CP.* The 1960 Extension to the Inspiration Electrolytic Tank House. R. E. Martin, C. E. Helms, Inspiration Consolidated Copper Co.



Hercules Powder Co. Missile Test Facility

2:00 p.m.—Substations

- CP.* Short Circuit Tests on Strain Buses. R. S. Melville, Southern California Edison Co.
- CP61-926. Considerations in Purchasing Mobile Substations. R. H. Schneider, Tacoma, Washington.
- CP.* Transformer Noise Problems on Substations. E. H. Wendt, Los Angeles Dept. of Water and Power.

2:00 p.m.—Electrical Instruments in Biology

- CP61-943. Electrical Techniques and the Heart in Health and Disease. G. G. Knickerbocker, W. B. Kouwenhoven, The Johns Hopkins University.
- CP.* Electronics, Plumbing and Last-Chance Cardiology. C. T. Dotter, University of Oregon.

Thursday, August 24

9:00 a.m.—Residential Electric Heating

- CP.* Investigation and Test of Grounding Method for Residential Installations. H. G. Ufer.
- CP.* Conductor Sizing for Electric Heating Loads. F. O. Wald, R. S. Patrick, Utah Power and Light Co.
- CP.* Higher Service Voltage for Future Residential Loads. A. S. Anderson, Ebasco Services, Inc.

9:00 a.m.—Industrial and Commercial Power Systems

- CP.* Power System Design for a Modern Electrolytic Copper Refinery. D. T. Young, Kennecott Copper Corp.
- CP61-953. Plant Electrical Engineering in the U. S. Army Chemical Corps. D. Kamoroff, U. S. Army Chemical Corps.
- CP.* Power Distribution and Supervisory Control for a Gas Compressor Plant. P. Belsky, Westinghouse Electric Corp.

9:00 a.m.—Wire Communications

- 61-945. Synthesis of Networks Simulating Impedance of Loaded Cable I Facilities. R. W. DeMonte, Bell Telephone Labs., Inc.
- CP61-946. Plug-In Span Pad and Artificial Line Units for Use on N & On Carrier. J. M. Ridd, Pacific Telephone and Telegraph Co.
- CP61-947. New Problems in Transmission Maintenance and Their Effect on Equipment Design Concepts Test. E. H. B. Bartelink, Northeast Electronics Corp.
- CP.* Making the Three-Channel Stackable Carrier Meet Present Day Transmission Requirements. R. R. Ashman, L. B. Johnson, Lenkurt Electric Co.
- CP.* Applications of a New 600 Channel Multiplexing System for Microwave. E. E. Combs, C. A. Kirkwood, Lynch Communication Systems, Inc.

9:00 a.m.—Materials Handling & Construction Industry

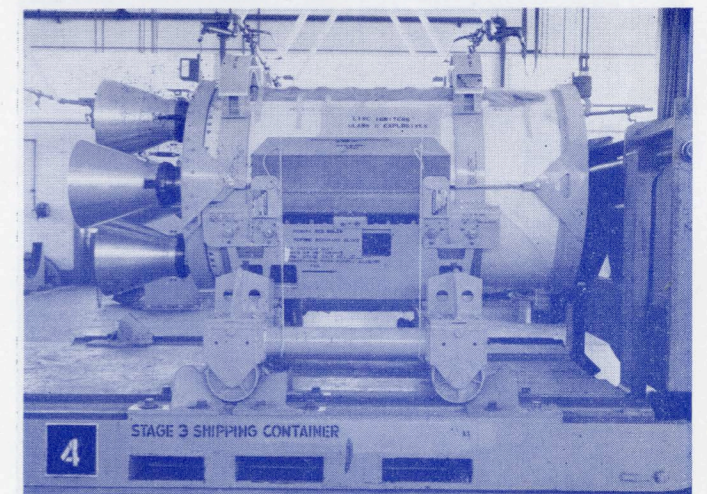
- CP.* Atlas Launcher Platform Drive System. A. S. Bishay, American Machine & Foundry Co.; L. R. Foote, General Electric Co.
- CP.* Electrification of Concrete Handling Equipment for Projects Construction. H. V. Nelson, B. F. Bennett, General Electric Co.

9:00 a.m.—Reactor Operation

- CP61-930. Control and Transient Performance of the Dresden Nuclear Power Station. W. I. Collett, E. R. Owen, General Electric Co.
- CP61-931. A Combined Nuclear and Coal Fired Power Plant—HNPF. C. L. Dunsmore, Atomics International.
- CP.* Transient Performance of the Yankee Atomic Electric Power Plant. J. M. Gallagher, Westinghouse Electric Corp.
- CP.* A Transistorized Radiation Pulse Amplifier. L. D. Test, H. H. Hendon; General Electric Co.

2:00 p.m.—Industrial and Commercial Power Systems

- CP61-949. Electrical Design Features of a New High-Rise Office Building. J. P. Kesler, B. J. Stables, Black and Veatch.
- CP61-933. A Computer Approach to Setting Directional Overcurrent Relays on Industrial Network Type Systems. A. H. Knable, Allis-Chalmers Mfg. Co.
- CP.* High Continuity Industrial Power Distribution with Metalclad Load Interrupter Switchgear. J. B. Castle, S & C Electric Co.



Third Stage, Minute Man Missile

PACIFIC GENERAL MEETING

2:00 p.m.—System Planning and Economics

- 60-1201. Optimized Transmission Tower Spotting on Digital Computer. V. Conventi, E. J. Hyland, D. E. Tickle, Arizona Public Service Co. (Re-presented for Discussion only.)
- 61-932. Short-Circuit Comparison Study. R. B. Shipley, D. Coleman, III W. L. Nason, Tennessee Valley Authority.
- CP61-922. High-Voltage Power System Decrements. M. J. Lantz, Bonneville Power Administration.
- CP61-924. Estimating Appliance Consumption in Distribution Systems. T. A. Lambe, J. C. Clapham, University of British Columbia.
- 61-923. A Note on the Capital Recovery Factor. J. F. Brennan, Pacific III Gas and Electric Co.

2:00 p.m.—Radio Communication

- CP.* Very Long Traveling Wave Antennas. D. K. Reynolds, University of Washington.
- CP61-928. Mobile Radio Test Laboratory. N. L. Brotzman, The Pacific Tel. & Tel. Co., Inc.
- CP.* An Analysis of Simultaneous Use of Mobile Telephone Systems for One Way Signalling. C. A. Rypinski, Secode Corp.; D. L. MacDonald, The Pacific Tel. & Tel. Co., Inc.
- 61-927. Design of a 2-Way Radio Channel for Maintenance of Telephone Company Services. D. L. MacDonald, The Pacific Tel. & Tel. Co., Inc.
- 61-920. Remote Outage Location by Means of VHF Radio Systems. I M. Cooper, Motorola, Inc. (Re-presented for Discussion only.)
- 60-1280. Noise-Loading Test of a Complete Frequency-Division Multiplex Voice Point-to-Point Communication System. L. P. Yeh, Page Communications Engineers, Inc. (Re-presented for Discussion only.)

2:00 p.m.—Solid State Devices

- CP.* The Simulation of Solar Radiation. D. Bickler, Hoffman Electronics Corp.
- CP.* Cryotrons—State of the Art. J. Bremer, General Electric Co.



U. S. Steel Corp. Geneva Works



L. D. S. (Mormon) Temple Square, Salt Lake City, Utah

Friday, August 25

9:00 a.m.—Broadcasting

- CP.* Auxiliary Television Broadcast Services. A. Taylor, University of Montana.
- CP.* New Recommendations Affecting TV Allocations. J. Barr, Federal Communications Commission.
- CP.* Developing a State-Wide Educational UHF TV Network. O. Reed, Jr., Jansky & Bailey.

9:00 a.m.—Transmission & Distribution

- CP61-940. Aluminum Cold Flow Compensation in Bolted Electrical Connections. G. L. Flynn, T. L. Rundlett, Anderson Electric Corp.
- 61-941. Unbalanced Open Conductors in Power Systems. N. Selseth, III The University of Michigan.
- CP.* The NEAR System—Disaster Warning Via the Utility Network. R. I. Kopan, Midwest Research Institute.
- 61-942. The Effect of Negative Corona Upon the Formation of Positive III Corona. G. A. Pearson, Berkeley, California.

9:00 a.m.—Feedback Control Systems

- 61-952. Improving the Linearity of the Steady State Gain Characteristic II by Use of Nonlinear Feedback. N. E. Nahi, University of Southern California; S. Plotkin, Hoffman Electronics Corp.
- CP61-937. Subharmonic Oscillations in On-Off Control Systems. J. C. Gille, Ecole Nationale Supérieure De L'Aéronautique; J. G. Paquet, Université Laval.
- CP61-938. Construction of the Lyapunov Function for Asymptotic Stability Via the Quadratic Form. L. K. Timothy, Autonetics.
- CP61-939. Discontinuous Automatic Control: Some Theoretical Considerations. G. J. Thaler, K. W. Han, U. S. Naval Postgraduate School.

The members of the **1961 Pacific General Meeting Committee** are H. B. Hodgins, General Chairman; R. A. Radford, Co-Chairman; John A. McDonald, Treasurer; J. N. Jones, Secretary; F. C. Bates, Finance, Registration and Paper Sales; R. K. Bertoach, Program; V. E. Clayton, Publicity; Mrs. P. G. Morse, Ladies Activities; P. G. Morse, Hospitality, Trips, Sports; J. D. Stephens, Entertainment; R. E. Stephenson, Student Activities; F. O. Wald, Hotel Facilities.

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