

Pacific General Meeting

August 8-12, 1960

SAN DIEGO, CALIF.

Headquarters
El Cortez Hotel



SCHEDULE OF EVENTS

August 8—MONDAY

Registration Begins—5:00 P.M.

August 9—TUESDAY

Ladies' Coffee Hour—9:00 A.M.

Technical Sessions—9:00 A.M.

Men's Luncheon—12:00 Noon

Ladies' Luncheon and Fashion Show—
12:30 P.M.

Technical Sessions—2:00 P.M.

Trip to Convair Astronautics—
2:00 P.M.

Ladies' Coffee Hour—3:00 P.M.

Dinner and Theater Party—5:30 P.M.

August 10—WEDNESDAY

Ladies' Coffee Hour—9:00 A.M.

Technical Sessions—9:00 A.M.

Trip to P. T. & T. University Ex-
change—9:00 A.M.

Luau and Harbor Cruise—11:30 A.M.

Technical Sessions—2:00 P.M.

Ladies' Coffee Hour—3:00 P.M.

Trip to Stromberg-Carlson—7:30 P.M.

August 11—THURSDAY

Ladies' Coffee Hour—9:00 A.M.

Technical Sessions—9:00 A.M.

Trip to Naval Electronics Laboratory—
9:00 A.M.

Ladies' Trip to La Jolla—11:00 A.M.

Golf Tournament

Technical Sessions—2:00 P.M.

Trip to Sycamore Canyon Test
Facilities—2:00 P.M.

Ladies' Coffee Hour—3:00 P.M.

Banquet and Dance—7:30 P.M.

August 12—FRIDAY

Ladies' Coffee Hour—9:00 A.M.

Technical Sessions—9:00 A.M.

Trip to South Bay Power Plant—
9:00 A.M.

Combined Luncheon—12:00 Noon

Technical Sessions—2:00 P.M.



San Diego, California

The 1960 Pacific General Meeting AIEE will be held this year in San Diego, California. Technical Sessions are scheduled for Tuesday, August 9, through Friday, August 12. Headquarters for the Meeting will be in the El Cortez Hotel. The registration desk will be open Monday afternoon and evening preceding the start of the Technical Sessions on Tuesday, August 9.

HOTEL RESERVATIONS

Requests for hotel reservations should be directed to Mr. Donald Struck, San Diego Convention and Tourist Bureau, 924 Second Avenue, San Diego 1, California. Hotel rooms are available in the following hotels:

<u>Downtown Hotels</u>	<u>SINGLES</u>	<u>DOUBLES</u>	<u>TWINS</u>	<u>SUITES</u>
El Cortez (Headquarters)	\$8 - \$12	\$12 - \$14	\$12 - \$16	\$25 up
San Diego	\$3 - \$7	\$5 - \$10	\$9 - \$12	\$18 up
U. S. Grant	\$7 - \$12	\$9 - \$15	\$9 - \$16	\$25 up

Motor Hotels

Mission Valley	(5 to 10 minutes by Freeway)		(Summer rates)	
Dell Webb's Hiwayhouse	\$10	\$13	\$15	
Kings Inn	\$8 - \$13	\$11 - \$16	\$11 - \$16	
Mission Valley Inn	\$8 - \$18	\$11 - \$12	\$12 - \$18	
Rancho Presidio Hotel	\$ - \$13	\$11 - \$17	\$14 - \$17	
Stardust Motor Hotel	\$8 - \$12	\$11 - \$15	\$13 - \$16	
Town and Country Vagabond	\$8 - \$13	\$11 - \$13	\$13 - \$16	
Motor Hotel	\$9	\$10	\$12	

Motor Hotels are located in Mission Valley, a ten minute drive from downtown by Freeway. Parking is available at all Hotels and Motels.

TECHNICAL PROGRAM

The Technical Sessions will cover the latest developments in many fields of interest to AIEE members. An event of special interest on the technical program will be a meeting of the "Aero-Space Transportation Committee". The technical program of the Aero-Space Committee is being developed around the theme "Electrical Frontiers of the Space Age". Papers have been solicited on the subject of "Secondary Electrical Power for Missile and Space Vehicles", including Nuclear Power, Electro-Chemical Conversion, Solar Energy Conversion and Thermo-Electricity. Other subjects will include Ionic Propulsion, Magnetohydrodynamics, Radiation Problems, Support Equipment and Reliability. The Pacific General Meeting Conference Liaison representative for the Aero-Space Transportation Committee is E. F. Kotnik.

A student program is planned which will include two Technical Sessions with prizes offered for the best students' papers, a students' luncheon and a meeting of students' counselors to discuss problems of interest. Information on the students' program may be obtained from Mr. A. H. Keith, 3827 Polk Avenue, San Diego 5, California.

PACIFIC GENERAL MEETING

INSPECTION TRIPS

The inspection trips planned will appeal to the varied interests of AIEE members.

Convair Astronautics Division, General Dynamics Corp.—Tuesday, August 9, 2 P.M.—AIEE members who have an interest in Missile Manufacturing, Research and Development will have a rare opportunity to visit one of our country's outstanding facilities engaged in this work. The inspection trip to the Convair-Astronautics Division plant will include a tour of the computer and electronic laboratory areas where the Atlas I.C.B.M. is designed and developed. The Astronautics Plant exemplifies the most modern concepts of the integrated engineering and manufacturing facilities required to produce space vehicles. It is a center of scientific research in areas of vital importance to our country's defense. The large computer installations, electronic laboratories and test facilities represent one of the finest examples of a modern scientifically based industrial complex.

University Avenue Exchange, Pacific Telephone & Telegraph Co.—Wednesday, August 10, 9 A.M.—The phone company's University office offers members a chance to see the CAMA (Centralized Automatic Message Accounting) equipment that connects San Diegans into the Nationwide Dialing System. A look at the Traffic operations will provide a glimpse of the operators at work including the special operators who are involved in customer dialed long distance calls.

Of great interest to touring groups will be the toll and television center. In this section microwaved television programs, carried by local San Diego Stations, are monitored by telephone technicians to insure quality audio and video transmission.

Telephone personnel will be on hand to guide AIEE members through the building and to answer any questions about the operations.

Stromberg-Carlson Division, General Dynamics Corp.—Wednesday, August 10, 7:30 P.M.—Stromberg-Carlson Division is developer and producer of the Charactron Tube, digital readout and computer systems and weapon systems devices.

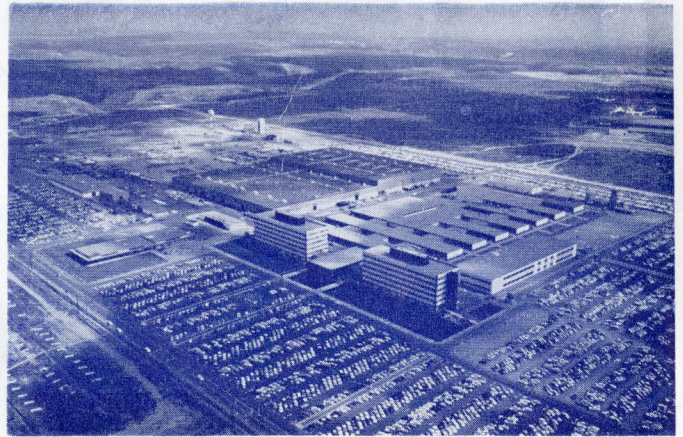
Naval Electronics Laboratory, U. S. Navy—Thursday, August 11, 9 A.M.—The Naval Electronics Laboratory is the Navy's principal West Coast research and development center for underwater and surface electronic devices and weapons systems.

Sycamore Canyon Test Facility, General Dynamics Corp.—Thursday, August 11, 2 P.M.—The Sycamore Canyon installation is a facility for static-testing the Atlas intercontinental ballistic missile. It is operated for the U. S. Air Force by Convair (Astronautics) Division of General Dynamics Corporation. Activated in 1956, the site is located in rough hilly terrain approximately 10 miles north-east of Convair-Astronautics' main plant on Kearny Mesa in San Diego.

Two stands are now in use at Sycamore for captive tests of the missile's complex systems and subsystems. These tests often culminate in brief firings of the rocket engines. A third stand, now under construction, will be used to test Centaur, a high-energy upper stage for Atlas. Centaur is powered by the first U. S. liquid hydrogen-liquid oxygen engines.

South Bay Power Plant, San Diego Gas and Electric Company—Friday, August 12, 9 A.M.—The inspection trip to the new South Bay Power Plant of the San Diego Gas and Electric Co. will give AIEE members an opportunity to inspect a new power plant. Incorporating the best in modern technology the South Bay Plant represents an investment of \$22,000,000 in the initial development of a site which will ultimately have eight units and a total generating capability of over 1000 megawatts. The first unit rated 142 megawatts will be on the line and operating during the inspection trip and preliminary construction work will be under way on a second 142 megawatt unit. Unit No. 1 has a 980,000 pounds of steam per hour boiler rated at 2150 p.s.i. and 1000°F. The turbine generator is rated at 142 Megawatt for steam conditions of 2000 p.s.i., 1000°F. initial temperature, with reheat to 1000°F.

John Jay Hopkins Laboratory, General Dynamics Corp.—Friday, August 12, 2 P.M.—The inspection trip to the new laboratory of the General Atomic Division of the General Dynamics Corp. will be of interest to AIEE members engaged in Atomic power work and to those members having an interest in nuclear research activities.



Convair-Astronautics Division Plant

The John Jay Hopkins Laboratory for Pure and Applied Science is a modern center of nuclear research and development where the traditions of academic research and freedom of inquiry are combined with the resources of a major industrial organization. Named for the founder and former Chairman of the Board of General Dynamics Corporation, the late John Jay Hopkins, the Laboratory is the focal point for activities of the Corporation's General Atomic Division, which was created in 1955.

The General Atomic staff numbers over 1000 and the Laboratory's facilities cover more than 350,000 square feet, including approximately 150 laboratories. Additional facilities are under construction.

Prime concept of the John Jay Hopkins Laboratory is the development of new ideas, from their theoretical conception through successful operation of the finished product, by means of the integration of diverse scientific and engineering disciplines. Programs underway include advanced high temperature gas-cooled reactors for central station power; maritime reactors; controlled thermonuclear reactions research; nuclear space propulsion; reactors for training, research, isotope-production, and medical and industrial uses; and many areas of basic scientific research.

Built at a cost of \$15 million, the laboratory is located on a 300 acre site in northern San Diego, California. The basic facilities include an administration building; a large experimental building; semi-circular laboratory building, with individual laboratories and corresponding offices; a circular library, and a technical information and conference center. Also included are a TRIGA reactor building, a linear accelerator, a fusion research center, a hot cell facility and an engineering building. The entire laboratory complex, including service and auxiliary buildings, is more than 350,000 square feet in size. It is one of the largest and most diversified general purpose private nuclear research and development facilities in the world.

SOCIAL EVENTS

A general program of social and recreational events will offer AIEE members an opportunity to relax with their old friends and to become better acquainted with their fellow engineers.

A **men's luncheon** in the Cotillion Room of the El Cortez Hotel on **Tuesday, August 9** will have as the principal speaker, Mr. J. R. Dempsey, Manager of the Convair-Astronautics Division, whose subject will be "The Space World of Tomorrow".

Tuesday evening will feature a **dinner and theater party**. Refreshments and dinner will be served at the House of Hospitality, Cafe Del Rey Moro in Balboa Park. After dinner, the players of the Old Globe Theater will present Shakespeare's play "As You Like It". Busses will leave the El Cortez Hotel at 5:30 P.M.

On **Wednesday, August 10**, a highlight of the entertainment events will be a **luau and harbor cruise**. Busses will leave the El Cortez Hotel at 11:30 A.M. and proceed to Broadway pier to board special boats for the trip to the Bali Ha'i Restaurant on Shelter Island. A luau will be served in the Hawaiian Village with entertainment provided by a group of authentic Polynesian dancers. After lunch the guests will return to the boats, complete a tour of San Diego Harbor, and return to the pier about 6:00 P.M.

Thursday, August 11th, the Mission Valley Country Club (Site of the San Diego Open) will play host to a **Golf Tournament** for those persons attending the Pacific General Meeting who are inter-

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TECHNICAL PROGRAM

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 to those who wish to avoid remittance, by check or otherwise. The Transaction 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.

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

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

Tuesday, August 9

9:00 a.m.—Power System Analysis I

- 60-987. Analogue Computer Representation of an Aircraft Electrical Power Generating System. J. L. Klingenberger, R. W. Briggs; Westinghouse Electric Corp.
- CP60-1026. Development of a Method to Define Limits for Voltage Transients in Aircraft Electric Power Systems. O. Markowitz, U. S. Naval Air Development Center.
- 60-1027. Exciter Armature Reaction and Excitation Requirements in a Brushless Rotating-Rectifier Aircraft Alternator. W. J. Shilling, Westinghouse Electric Corp.
- CP.* Voltage Modulation on Aircraft Electric Power Systems as a Function of the Alternator Flexible-Shaft System. M. Flugstad, Boeing Airplane Co.

9:00 a.m.—System Analysis

- CP.* On the Prediction of Transient Thermal Environments in Space Vehicles. T. Ishimoto, B. W. Randolph; Hughes Aircraft Corp.
- CP.* Magnetohydrodynamic Orbit Control for Satellites. S. T. Demetriades, Northrop Corp.
- CP.* Human Maintenance Functions in Space. M. A. Grodsky, G. W. Levy, R. D. Sorkin; The Martin Co.
- CP60-1028. The Effect of Variable Plasma Conductivity on MHD Energy Converter Performance. W. B. Coe, C. L. Eisen; Republic Aviation Corp.
- CP.* Environmental Consideration as a Prime Factor in Missile Development. P. G. Perry, General Motors Corp.

9:00 a.m.—Heat Pumps and Space Heating

- CP.* Thermo-electric Heating and Cooling. R. L. Eichorn, Whirlpool Labs.
- CP.* Baseboard Heating. D. Quirk, Hotpoint, Inc.
- CP.* New Applications in Heat Pumps. D. Slack, General Electric Co.
- CP.* Computation and Measurement of Leakage Currents in Floor Heating Grids. H. P. Gluckman, City of Los Angeles Dept. of Water and Power.
- CP.* Principles of Electric Heating for Schools. S. L. Forsyth, Montgomery Bros.

9:00 a.m.—Transmission and Distribution

- CP60-1025. Abnormal Voltages on Control Circuits of Pole Top Switched Capacitor Banks. D. C. Keezer, A. E. Henderson; Pacific Gas & Electric Co.
- 60-1001. Effect of Metal-Dielectric Junction Phenomena on High-Voltage Breakdown Over Insulators in Vacuum. M. J. Kofoid, Boeing Airplane Co.
- CP.* Influence of Fault Resistance on Magnitude of 34.5-KV Feeder Faults. P. A. Oakes, Idaho Power Co.

9:00 a.m.—Transformers

- CP.* The Insulation Systems Approach to Oil-Filled Power Transformers. J. R. Meador, General Electric Co.
- CP.* Auto Transformer and Resistance Methods of Load Tap Changing. H. L. Prescott, Westinghouse Electric Corp.
- 60-1003. Theory & Design of Premagnetized Current Transformer. T. K. Bose, Heavy Electricals Limited.
- CP.* A Self-Resetting Pressure Relief Device for Transformers. M. Aronson, McGraw-Edison Co.

9:00 a.m.—Computing Device Technology

- CP60-1061. TACDEN, A Message Composer. S. Young, J. F. Donan; Aeronutronic.
- CP60-1005. Rotating Raster Character Recognition System. R. W. Weeks, International Business Machines Corp.
- CP.* Airbourne Digital Computer Reliability. J. F. Cherney, North American Aviation, Inc.
- 60-1004. The Principle of Equivalent Areas. R. E. Andeen, Sperry Rand Corp.
- 60-1006. Amplidyne Circuit Analysis. G. W. Bills, North American Aviation, Inc.



Pacific Telephone's University Toll Center

PACIFIC GENERAL MEETING



U. S. Navy Electronics Laboratory

2:00 p.m.—Power System Analysis II

- 60-1029. Electrical System Transients and Sensitive Circuit Control II for Missiles and Space Vehicles. T. B. Owen, Douglas Aircraft Co.
- 60-1030. The Effect of Speed Variation on Aircraft Electric Power II Systems Speed Modulation and Voltage Modulation. H. A. Kahle, Jack & Heintz Inc.
- CP.* High Frequency Alternator for Variable-Speed Constant-Frequency System. D. A. Wilhelmson, General Electric Co.
- 60-1031. A Controlled Rectifier Regulator for Aircraft DC Generators II 120°C Applications. A.L. Wellford, General Electric Co.
- CP.* Systems Approach to Aero-Space Secondary Electrical Power Systems. E. Little, Douglas Aircraft Co.

2:00 p.m.—Thermo Electric Power Generation

- CP60-1066. Thermoelectricity Application Considerations. A. A. Sorenson, The Martin Co.
- CP60-1032. Closed Spaced Thermionic Converter Patch Effects. B. J. Weigman, Jr., J. L. Gumnick; Loyola College.
- CP.* Generalized Theory of the Thermionic Plasma Converter. M. E. Talaat, The Martin Co.
- CP.* Solar Cell Characteristics Related to Satellite Vehicle Requirements. J. F. Wise, U.S.A.F.
- CP60-1033. Magneto—Thermionic Power Generation. A. Schock, Republic Aviation Corp.

2:00 p.m.—Wire Communication Systems

- 60-998. Two-Wire Operation of "N" Carrier Systems. R. W. Dean, Pacific Telephone & Telegraph Co.; E. M. Karkar, Lynch Communications Systems, Inc.
- CP60-999. Impulse Noise on N Carrier. S. D. Overby, Pacific Telephone & Telegraph Co.
- CP.* Transmission Problems Involved in Using Normal Telephone Facilities at Frequencies Up to 400 Kilocycles. E. E. Combs, Lynch Carrier Systems, Inc.
- CP.* Interconnection Circuits for Carrier Networks. D. Welling, R. C. Herrick, A. M. Seymour; Lenkurt Electric Co.

2:00 p.m.—Transmission and Distribution

- 59-884. An Aviation Hazard Light for Mid-Span Operation on Power III Transmission Lines. H. J. Dana, Washington State Institute of Technology.
- 60-1000. Some Chemical Treatments to Reduce the Resistance of III Ground Connections. R. J. Clark, B. O. Watkins; Utah State University.
- CP.* Computer Application to Determination of Power System Circuit Breaker Duties. M. J. Lantz, Bonneville Power Administration.
- 60-1065. The Analysis of Hydro-Power Peaking and Pondage by III Computer. C. E. Hildebrand, Corps of Engineers.

2:00 p.m.—Computing Design Automation

- CP60-1063. The R-W Logic Simulation Program. H. Adler, Computer Applications Inc.; H. Jacobs, J. Katz, Thompson Ramo-Wooldridge, Inc.
- CP60-1007. A Computer Program for Preparing Wiring Diagrams. Mrs. D. B. Kirby, C. W. Rosenthal; Bell Telephone Labs., Inc.
- CP.* Variable Block Logic Diagram Program. P. Quantz, Burroughs Corp.
- CP.* An Interpretive Simulation Program for Estimating Occupancy and Delay in Traffic Handling Systems Which Are Incompletely Detailed. D. L. Dietmeyer, University of Wisconsin; G. Gordon, J. P. Runyon, B. A. Tague, Bell Telephone Labs., Inc.

Wednesday, August 10

9:00 a.m.—Design Problems (Environmental)

- CP60-1034. Metal Film Resistive Elements for Use in Space Under Varying Radiation Intensities. R. C. Langford, Daystrom, Inc.
- 60-986. Design and Development Problems of Radiation-Resistant II High-Temperature Tolerant Electronic Equipment Components. J. Gray Stuart, General Electric Co.
- 60-1068. Design and Development of a 600°F Pulse Preamplifier for II Nuclear Instrumentation. W. L. Frisby and E. M. Palmer, General Electric Co.
- CP.* Radiation-Resistant Electronics. R. A. Magee, D. A. Henken; Bendix Corp.
- 60-1035. Application of Cryogenics to Electrical-Electronic Design II R. J. Allen, The Martin Co.

9:00 a.m.—Constant Frequency Variable Speed Generation

- 60-989. Precise Frequency Power Generation From an Unregulated II Shaft. K. M. Chirgwin, L. J. Stratton, J. R. Toth; Jack & Heintz, Inc.
- CP.* Design Considerations for Static Inverters. W. E. Hyvarinen, T. M. Heinrich, R. E. Hulsey; Westinghouse Electric Corp.
- CP.* The Frequency Converter Approach to a Variable Speed, Constant Frequency System. S. C. Caldwell, L. R. Peaslee; D. L. Plette, General Electric Co.
- CP60-1053 Variable Speed Constant Frequency Generator Circuit Using a Controlled Rectifier Power Demodulator. T. Bernstein, Space Technology Lab.; N. L. Schmitz, University of Wisconsin.

9:00 a.m.—Radiation Effects Symposium—I

- CP.* The Black Science of Nuclear Measurements. J. D. Simpson, General Electric Co.
- CP.* Techniques of Counting Foils and the Interpretation of Useful Information From the Counts. R. E. Wood, J. F. Kunze; General Electric Co.
- CP.* Neutron Flux Measurements in Test Reactor. C. H. Hogg, Phillips Petroleum Co.
- CP.* Recent Development in Radiation Instrumentation. H. A. Thomas, General Atomic.

TECHNICAL PROGRAM

9:00 a.m.—Radio Communication Systems

- 60-995. Establishment of a 450-MC Vehicular Radio System in the I Los Angeles Basin. G. Applegarth, The Pacific Telephone Co.
- 60-996. Centralized Testing of a V.H.F. Mobile Radio System. D. L. MacDonald, The Pacific Telephone & Telegraph Co.
- CP60-997. A Problem of TV Interference to VHF Maritime Services. A. C. Cline, Pacific Telephone Northwest.
- CP.* Establishing a Unique Microwave System to John Day, Oregon. P. Austin, The Pacific Telephone & Telegraph Co.

9:00 a.m.—Electro-Chemical Technology

- CP.* Operating Record of Sealed Tank Mercury Arc Rectifiers. L. J. Harris, Aluminum Co. of America.
- CP.* Mechanism of Electrode Reactions in Fused Salt Electrolytes. H. Stern, J. G. Surendranath; Washington State University.
- CP.* Some Technical Aspects of Electrical Safety in Aluminum Potlines. G. B. S. Rickettes, Kaiser Aluminum & Chemical Corp.
- CP.* Liquid Metal Switching. K. A. Ahmad, International Business Machines Corp.
- CP.* Trends and Practices For Terminating Large Aluminum Conductors. William Sanders, Kaiser Aluminum and Chemical Corp.

9:00 a.m.—Substations

- CP60-1008. Phasing Conventions for the Designation of Busses and Conductors in Outdoor Switchracks. O. R. Bulkley, Southern California Edison Co.
- CP60-1009. Substation Design Practices Utilizing 115-13.8 KV Single Circuit Integral Units. W. L. Kelly, General Electric Co.; P. W. Kiesling, Public Service Co. of Colorado.
- CP.* Adaptation of Single Feeder Unit Substation to the Wichita Metropolitan Area. E. J. Karsten, Kansas Gas & Electric Co.

2:00 p.m.—Design Problems

- CP60-1036. Radar Echo Augmentation Device (Read) As An Aid to Air. A. W. McMurtrey, Temco Aircraft Corp.
- CP60-1037. Component Parts Status for 600°F Aircraft Generator Control (Part 2). P. M. Tabor, J. F. Scoville; General Electric Co.
- CP60-1038. Evolution and Testing of a Navigational Satellite. M. A. Schreiber, T. Wyatt; The Johns Hopkins University.
- 60-1039. Development of a Flight Controller for the Delta Space II Research Vehicle. R. F. Donovan, Douglas Aircraft.

2:00 p.m.—Radiation Effects Symposium—II

- CP.* Radiation Environment in Space. F. S. Johnson, Lockheed Aircraft Corp.
- CP.* A Review of Pulse Nuclear Radiation Effects. J. Maxey, Space Technology Labs., Inc.

2:00 p.m.—Radio Communication Systems

- CP.* Off-the-Air TV Problems in the Northwest. E. R. Conly, Bell Telephone Co. of Nevada.
- CP60-992. Automatic Precipitation and Temperature Reporting Over a VHF Radio System. E. J. Warchol, M. S. Sachs, H. S. Lorentson; Bonneville Power Administration.
- CP60-993. Design of a Dispatch Mobile Radio System Using Multiple Base Stations. J. H. Gibbs, L. W. Parsons; Pacific Telephone—Northwest.
- 60-994. Proposed Monocycle-Pulse, VHF Radar for Airborne Ice and Snow Measurement. J. C. Cook, Southwest Research Institute.
- 60-1064. Use of Moon or Satellite Relays for Global Communications. I L. P. Yeh, Page Communications Engineers, Inc.

2:00 p.m.—Solid State Devices

- CP.* Compound Two-Ports Systematized. T. R. Nisbet, W. W. Happ; Lockheed Aircraft Corp.
- CP.* Jacobians of Frequency-Selective Networks. T. R. Nisbet, W. W. Happ; Lockheed Aircraft Corp.

CP.* Systematic Formulation of the Sequal Flow Graph of a Complex Servo System. W. W. Happ, J. L. Burroughs; Lockheed Aircraft Corp.

CP.* A Numerical Routine Suitable for Computer Evaluation of Complex Flow Graphs. W. W. Happ, J. L. Burroughs; Lockheed Aircraft Corp.

CP.* Distributed Parameter Networks for Microminiaturization. P. S. Castrow, W. D. Fuller, Lockheed Aircraft Corp.

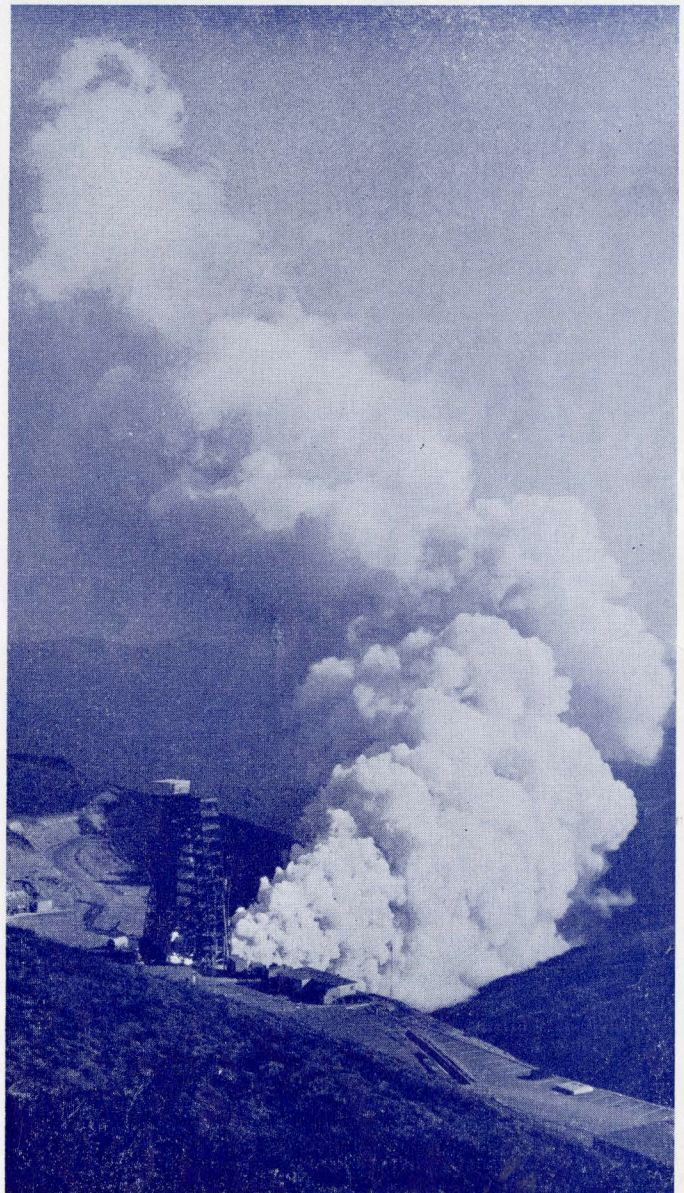
CP.* Circuit Fabrication from Refractory Materials. W. D. Fuller; Lockheed Aircraft Corp.

2:00 p.m.—Substations

CP60-1062. Design and Construction of an All-Aluminum Substation. O. R. Bulkley, R. S. Melville, N. E. Weber; Southern California Edison Co.

CP60-1011. Ground Grids for High Voltage Stations IV—Resistance of Small and Large Sub-Stations. E. T. B. Gross, Illinois Inst. of Technology; E. J. Wallman, General Electric Co.

CP60-1012. Optimum Diameter, Spacing and Burial Depth of Ground Grid Conductor. R. F. Stevens, Bonneville Power Administration.



Atlas Missile In Captive Tests

PACIFIC GENERAL MEETING

Thursday, August 11

9:00 a.m.—Solar Power in Space

- CP60-1040. Experimental Solar Thermionic Converter for Space Use. H. Oman, Boeing Airplane Co; G. Street, Jr., General Electric Co.
- CP60-1041. Selectively Emissive Materials for Solar Heat-Absorbers. R. B. Gillette, Boeing Airplane Co.
- CP60-1042. Design of a Solar Powered Thermionic Diode. W. J. Leovic, M. W. Mueller; Thompson Ramo Wooldridge Inc.
- CP60-1043. Configuration Effects on the Performance of Solar Photovoltaic Systems for Earth Satellites. S. J. McCunney; General Dynamics Corp.

9:00 a.m.—Reliability

- CP.* Optimizing Simple Circuitry for Reliability and Performance by Failure Mode. J. R. Hanne.
- CP60-1045. Reliability Considerations in the Design of Static Vs. Relay Logic for Aircraft Protective Panels. W. O. Hansen, J. Popa; General Electric Co.
- CP60-1046. Development of an Electrical Initiation System for Flight Capsule Recovery With Emphasis on Reliability. R. M. Sells, Jr.; Vought Aeronautics.
- 60-1047. Statistics Applied to Electrical Laboratory Evaluations. F. II Albrecht, The Martin Co.
- CP.* Component Development—A Key to Space Reliability. M. E. Wheelock, North American Aviation

9:00 a.m.—Radiation Technology

- CP.* How Radiation from a Nuclear Explosion May Affect Electronic Equipment. W. R. Langdon, General Electric Co.
- CP60-1015. Neutron and Gamma Irradiation of Some Square Loop and Microwave Ferrites. R. W. Moss, Boeing Airplane Co., C. F. Kooi, M. E. Baldwin; Lockheed Aircraft Corp.
- CP.* Neutron Irradiation of Esaki Diodes. F. J. Reid, L. W. Aukerman, R. D. Baxter; Battelle Memorial Institute.
- CP.* Electron Irradiation of Silicon Solar Cells. J. C. Fraser, General Electric Co.
- CP.* Proton Damage to Solar Cells. K. T. Chow, E. A. Lodi; Lockheed Missile Systems Div.
- CP60-991. Radiation Shielding for Space Vehicles. J. W. Keller, N. M. Schaeffer; General Dynamics Corp.

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

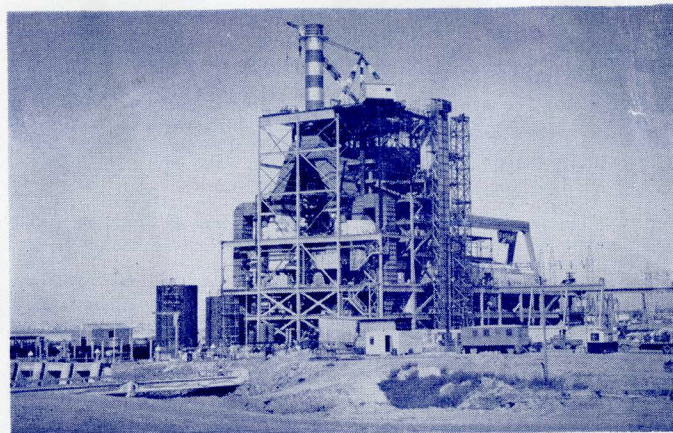
- CP.* Power Distribution and Associated Problems When Dealing With Taconite Ores. A. F. Reynolds, United States Steel Corp.
- CP.* Electrical Systems for Power and Lighting at the New Los Angeles International Airport. J. S. Hamel, Burbank, California.
- CP.* Electrical Load Calculations for Industrial Power Systems by Digital Computer. C. W. Boice, Jr., C. F. Braun & Co.
- CP.* Techniques of High Frequency Distribution Within Buildings. J. N. Robertson, Los Angeles Dept. of Water and Power.

2:00 p.m.—Power Sources

- CP60-1048. Reserve-Type Ammonia Electrochemical Systems as Secondary Electric Power Sources for Space Vehicles. H. S. Gleason, G. S. Gunnison; Eastman Kodak Co.
- CP.* Waste Heat Exchangers Characteristics Used in Heat Cycle Engines. J. L. McCabria, P. E. Keuser; Westinghouse Electric Corp.
- 60-1049. Step Up Frequency Changer. R. J. Wurm, L. J. Stratton; II Jack & Heintz, Inc.
- 60-985. Photovoltaic Solar Energy Converters for Space Vehicles—II Present Capabilities and Objectives. A. B. Francis, W. W. Happ; Lockheed Aircraft Corp.

2:00 p.m.—Support Checkout Equipment

- CP60-1050. Jet Aircraft and Automation an Airline's Venture in Automatic Checkout Equipment. R. G. Collins, United Air Lines.
- CP.* Design Considerations for Simple Inexpensive Portable Trouble-Shooting Equipment for Aircraft Maintenance. S. D. Clayton, C. J. Jenkins, A. P. Case; Douglas Aircraft Co.



South Bay Steam Plant, San Diego G. & E. Co.

- CP.* Computed Confidence for Aero Space Transportation. D. S. Bassett, Hughes Aircraft Co.
- CP.* Digital Evaluation Equipment—A Multipurpose Test System. O. T. Carver, Radio Corp. of America.

2:00 p.m.—Radiation Effects Round Table

- Round Table Discussion led by:
- CP.* E. J. Wesley, U. S. Navy Radiological Defense Lab.
- CP.* J. W. Lindner, Space Technology Lab., Inc.

2:00 p.m.—Nuclear Instrumentation

- CP.* Ion Chambers and Proportional Counters for Sensor Applications. R. D. Moorhead, General Electric Co.
- CP.* Reactor Safety Circuit Static Annunciator, A. A. Maupin, Jr., General Electric Co.
- CP.* Trends in Solid State Nuclear Reactor Instrumentation. R. L. Deming, Stromberg-Carlson.
- CP.* A Completely Transistorized Nuclear Instrumentation System for a Power Reactor. R. L. Deming, C. H. Clarridge; Stromberg-Carlson.
- CP.* A Completely Transistorized Self Tested Safety System for a Power Reactor. H. L. Hill, H. P. Pinder; Stromberg-Carlson.
- CP.* Portable Radiation Instrumentation Standardization. W. G. Spear, General Electric Co.

2:00 p.m.—Solid State Devices

- CP.* Transistor-Tunnel Diode Combination Produces an N-Type Negative Resistance Characteristic. C. D. Todd, Hughes Aircraft Corp.
- CP.* A Survey of Semiconductor Materials Technology. J. H. Myer, Hughes Aircraft Corp.
- CP.* Equivalent Circuit Characteristics of the Solar Cell. Lockheed Aircraft Corp. *Robert H. Walson*
- CP.* The Propagation of Production Spread Error in Transistor Calculations. T. R. Nisbet, Lockheed Aircraft Corp.
- CP.* High Temperature Conversion by High Temperature Semiconductors. S. W. Kurnick, R. L. Fitzpatrick, J. F. Leavy; General Atomic.

2:00 p.m.—Feedback Control Systems—I

- CP60-1020. Problems of Asymptotic Behavior and Stability. L. Cesari, Purdue University.
- CP60-1021. Phase Space Analysis and Design of Linear Discontinuously Damped Feedback Control Systems. K. W. Han, G. J. Thaler; U. S. Naval Postgraduate School.
- 60-1022. A Modified Posicast Method of Control with Applications II to Higher Order Systems. H. C. So, G. J. Thaler; U. S. Naval Postgraduate School.
- CP.* Time Domain Design of Sampled-Data Control Systems. M. P. Pastel, G. J. Thaler; U. S. Naval Postgraduate School.

Friday, August 12

9:00 a.m.—Power System Controls

- 60-988. Semiconductor-Magnetic Overvoltage and Underfrequency II Protection Circuits. R. R. Secunde, Jack & Heintz, Inc.
- 60-1051. A High Speed Voltage Regulating and Static Excitation II System for AC Aircraft Generators. H. W. Gayek, A. C. Hupp; General Electric Co.
- CP60-1052. A Synchronous Static Frequency Controller. L. B. Hallberg, A. W. Patterson; Sundstrand Aviation.
- 60-1054. Model Laws of Eddy-Current Couplings for Aircraft Alternator Drives. E. A. Erdelyi, University of Delaware; (Formerly with General Electric Co.); E. E. Kolatorowicz, General Electric Co.

9:00 a.m.—Applications

- 60-1055. Gas Discharge Lamp Fixtures for Aircraft Navigation Lights. II M. G. Tyler, Douglas Aircraft Co., Inc.
- CP.* Integrally Lighted Instruments—Their Color and Brightness Evaluation. H. C. Klein, J. Berg, Jr.; Douglas Aircraft Co.
- CP60-1056. Lightning Arresters for HF Antenna Systems on Jet Aircraft. R. F. Huber, Joslyn Mfg. and Supply Co.; M. M. Newman, J. D. Robb; Lightning and Transients Research Inst.
- 60-984. Performance of Electrical Connectors at High Altitude. A. L. II Coates, Bendix Aviation Corp.

9:00 a.m.—Feedback Control Systems—II

- 60-1016. Integral of the Error Squared as a Performance Index for II Automatic Control Systems. R. N. Clark, University of Washington.
- CP60-1017. Input-Output Relations for Sampled Data Systems by Inspection. R. Y. Huang, Syracuse University.
- CP60-1018. Stochastic Time Optimal Control Systems. M. Aoki, University of California.
- CP60-1019. A Synthesis Technique for Linear Feedback Control Systems. L. E. Weaver, The University of Arizona, R. L. Miller, Jr., U. S. Army Signal Corps.

9:00 a.m.—Radiation Effects

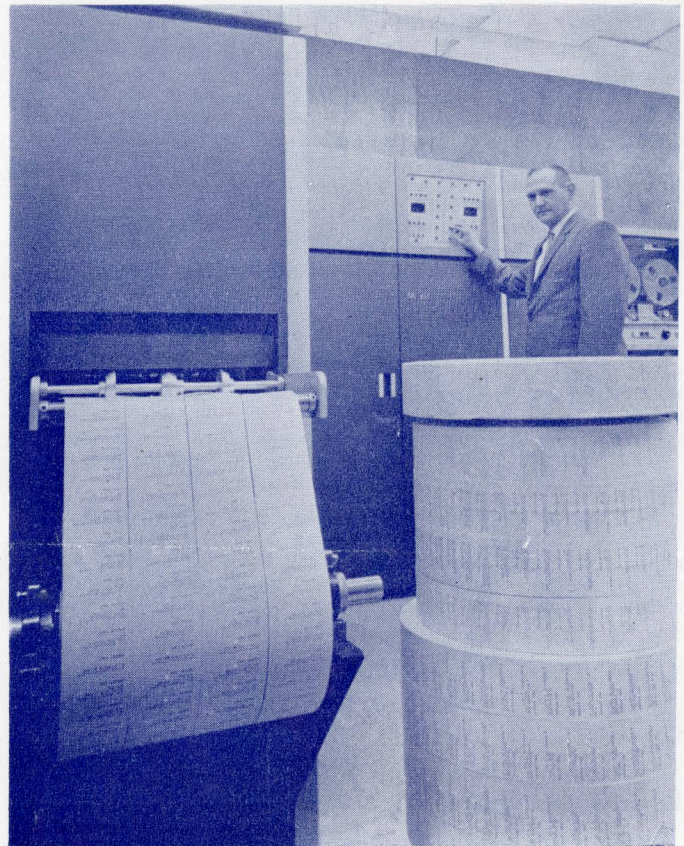
- CP.* Radiation Induced Currents in Polyethylene. J. W. Winslow, U. S. Naval Radiological Lab.
- CP.* A Thin Plastic Radiation Dosimeter. K. K. Harris, W. E. Price; Lockheed Aircraft Corp.
- CP.* Gamma Radiation Induced Conductivity in Solid Insulation. V. Culler, W. Barney, H. E. Rexford; Corning Glass Works.
- 60-1013. Calculation of Absorbed Dose. C. H. Cheek, V. J. Linnenbom; U. S. Naval Research Lab.

9:00 a.m.—Direct Conversion Techniques

- CP.* Thermoelectric Converter Under Constant Heat Flux Operation. P. S. Castro, W. W. Happ; Lockheed Aircraft Corp.
- CP.* Electrical and Thermal Measurements at High Temperatures. C. Cutler, General Atomic.
- CP.* Direct Conversion Reactor Systems. R. C. Howard, General Atomic.



John J. Hopkins Lab, General Dynamics Corp.



Stromberg-Carlson at San Diego

- CP.* Experimental Observations in Cesium Cells. H. L. Garvin, General Atomic.
- CP.* Analysis of Thermionic and Plasma Heat-To-Electricity Converters. W. B. Teutsch, General Atomic.

9:00 a.m.—Nuclear Instrumentation

- CP.* An Accurate Control Rod Position Indicator System. M. N. Palmer, H. A. Morewitz; Westinghouse Electric Corp.
- CP.* Shipping Port Reactor Protection System Experience. A. I. Moss, Westinghouse Electric Corp.
- CP.* Performance of the Reactor Protection and Nuclear Instrumentation Systems in the Presence of Oscillations in P.W.R. Core 1 Seed 1. O. D. Parr, Westinghouse Electric Corp.
- CP.* P.W.R. Reactor Plant Control. E. A. Wiczorkowski, Westinghouse Electric Corp.
- CP.* Standardization in the Design and Construction of Electronic Instrumentation and Control Systems. J. G. Nish, University of California.
- CP.* Accelerator Beam Pulsing System with Extremely Wide Range of Pulse Lengths and Pulse Repetition Rates. K. Aaland, University of California.

2:00 p.m.—Support Power Parameters

- CP60-1057. Terrestrial and Extra-Terrestrial Electrical Support Frontiers in the Space Age. R. M. Loeb, The Martin Co.
- CP60-1058. Precise Rotary Power Conversion for Ground Support of Aero-Space Vehicles. J. A. Hedges, The Martin Co.; G. O. Williams, Hobart Bros., Inc.
- CP.* Very Slow Charge-Fast Discharge of Nickel Cadmium Batteries. F. Albrecht, The Martin Co.
- CP60-1067. One-Point Ground System With Radio Frequency Shielding and Filtering for Missiles and G. S. E., R. A. Farone, The Martin Co.

2:00 p.m.—Testing

- CP60-1059. Testing of a 600°F Electrical Generation and Distribution System. S. J. Nalbandian, J. V. Ekberg; North American Aviation Inc.
- 60-990. Determination of Intermittent Duty Rating of an Aircraft II Motor by Equivalent Thermal Circuit and a Direct Analog Computer. J. N. C. Chi, General Electric Co. (Re-presented for Discussion only).
- CP60-1060. Test Analysis of Aircraft Alternator Fault Transient Torque Loading. J. S. Turner, Jr., Convair.

PACIFIC GENERAL MEETING

CONTINUED FROM PAGE TWO

ested in such an activity. A \$5.00 entrance fee will be charged for this event and participation will be limited to the first 50 persons (approximately) who sign up for the tournament. The John B. Fiskin Cup (perpetual) will be awarded to the first low net (basis blind bogey), members only. In addition, prizes will be awarded to first, second and third low net, members only, first, second and third low gross, members only, and first and second low net for nonmembers. Minor prizes will also be awarded for such things as longest drive, closest to the pin, etc. Tickets for the Golf Tournament will be sold at the registration desk only. However, you can insure your participation by indicating your desire to play, on the Advance Registration Card.

An evening of dancing and entertainment by a star studded cast will be offered **Thursday, August 11**, at a **banquet and dance** in the Caribbean Room of the El Cortez Hotel. Entertainment will be provided by the lovely "Lois Ray and her Marionette", and the amplified harmonicas of the "Mulcays". The featured act of the evening will be the nationally known singing group "The Sportsmen". Charlie Parnell's Orchestra will complete the evening with dance music. Dress will be semi-formal. Time 7:30 P.M.

Dr. Kenneth McFarland, voted nationally as "America's Foremost Public Speaker" will appear through the courtesy of General Motors at the **combined luncheon** in the Don Room on **Friday, August 12**. Dr. McFarland's varied interest and broad experience will bring a valuable message to everyone.

Prices for each event are as follows:

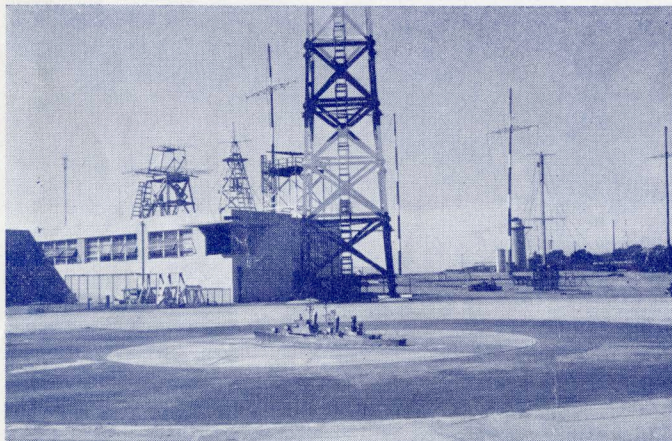
Tuesday	MEN'S LUNCHEON	\$3.50/person
Tuesday	DINNER AND THEATER PARTY	\$6.00/person
Wednesday	LUAU AND HARBOR CRUISE	\$6.00/person
Thursday	BANQUET AND DANCE	\$7.50/person
Friday	COMBINED LUNCHEON	\$3.50/person

LADIES PROGRAM

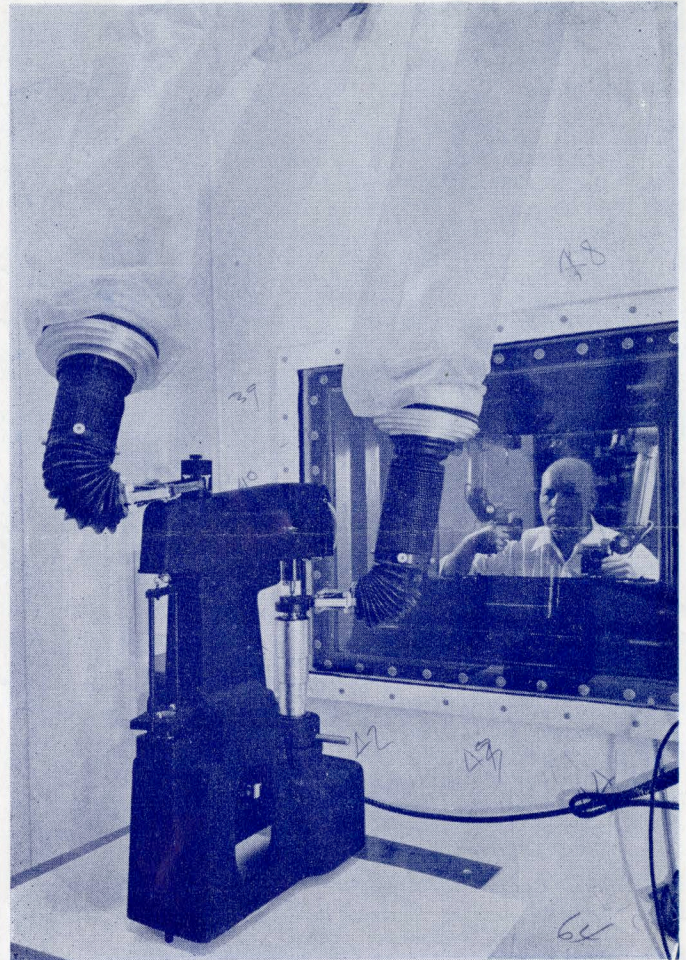
Special events are planned for the ladies. On **Tuesday, at 12:30 P.M.** there will be a **luncheon and fashion show** in the Don Room of the El Cortez Hotel. The fashion show will be presented by the El Cortez Fashion Center. The tickets for this event will cost \$4.00 per person.

Thursday will feature a **bus trip to La Jolla**, combined with a luncheon and shopping tour. Busses will leave the El Cortez Hotel at 11:00 A.M., arriving in La Jolla in time for luncheon at the La Valencia Hotel. After a shopping tour of the local shops, busses will return to the hotel at 3:00 o'clock. Tickets will be priced at \$3.50.

The **pool patio** at the El Cortez has been reserved for morning and afternoon **coffee hours** for the ladies. Coffee will be served each morning of the meeting from 9 to 11 A.M., and each afternoon from 3 to 4:30 P.M. Bridge tables and cards will be available for those ladies wishing to play bridge or canasta.



Model Range-Antenna Testing Facilities, U.S.N. Electronics Lab.



General Atomics Hot Cell Facility

REGISTRATION

The registration desk will be located in the entrance lobby of the El Cortez Hotel. Facilities for registering will be available Monday beginning at 5 p.m. and continuing daily throughout the meeting.

For convenience, members and non-members should return the advance registration card sent with their mailed 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.

The Members of the **GENERAL COMMITTEE FOR THE 1960 PACIFIC GENERAL MEETING** are:

J. F. Sinnott, Chairman; M. R. Marston, Vice Chairman; R. T. Strong, Treasurer; G. C. Eggen, Secretary; W. A. Davis, Chairman, Transportation & Inspection Trips; A. H. Keith, Chairman, Student Activities; G. B. Kenline, Chairman, Arrangements; R. Kinslow, Chairman, Golf Tournament; L. R. Knerr, Chairman, Hotel & Registration; E. Kotnik, Chairman, Technical Papers; Mrs. M. R. Marston, Chairman, Ladies' Activities; R. K. Walter, Chairman, Entertainment; H. R. Hughes, Chairman, Publicity; A. Paul, Chairman, Finance.

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