

EDITOR'S PROFILE of this issue

from a historical perspective ...

with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

November, 1975:

Cover: Focus is on the new IEEE-488 bus, with a full-day class scheduled for engineers to learn about all aspects of it. See page 3.

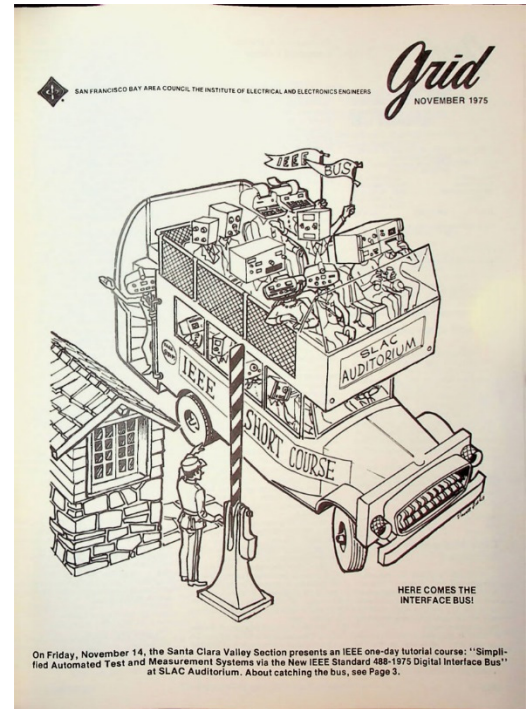
Page 6: The new Oakland East Bay Section has surveyed members to see what chapters might make sense for them. Prospects include IAS, PES, Computer, EMB, CAS, ComSoc, and Control Systems. The plan is to establish three new chapters this year.

Page 7: Survey results for the PAC polling of members are tabulated.

Page 8: The GRID magazine is exploring potential changes to its coverage and what might be suitable to appear in future issues. There are also several impassioned letters to the editor about the California nuclear power initiative.

Page 9: Three chapters, including my PHP chapter, are putting on a Saturday tutorial. Dave Guidici of Fairchild gives a talk on failure mechanisms in hybrids. Dave and I go on to organize a multi-year series of IEEE Short Courses, having a lot of fun in the process. See the GRID article in the December 1980 issue.

Page 11: William Diffie speaks on cryptography for computer systems. He and Martin Hellman of Stanford go on to create public key encryption.



Archive of available SF Bay Area GRID Magazines is at this location:

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

At time of scanning, the bound volumes are held by Paul Wesling.

April, 2025

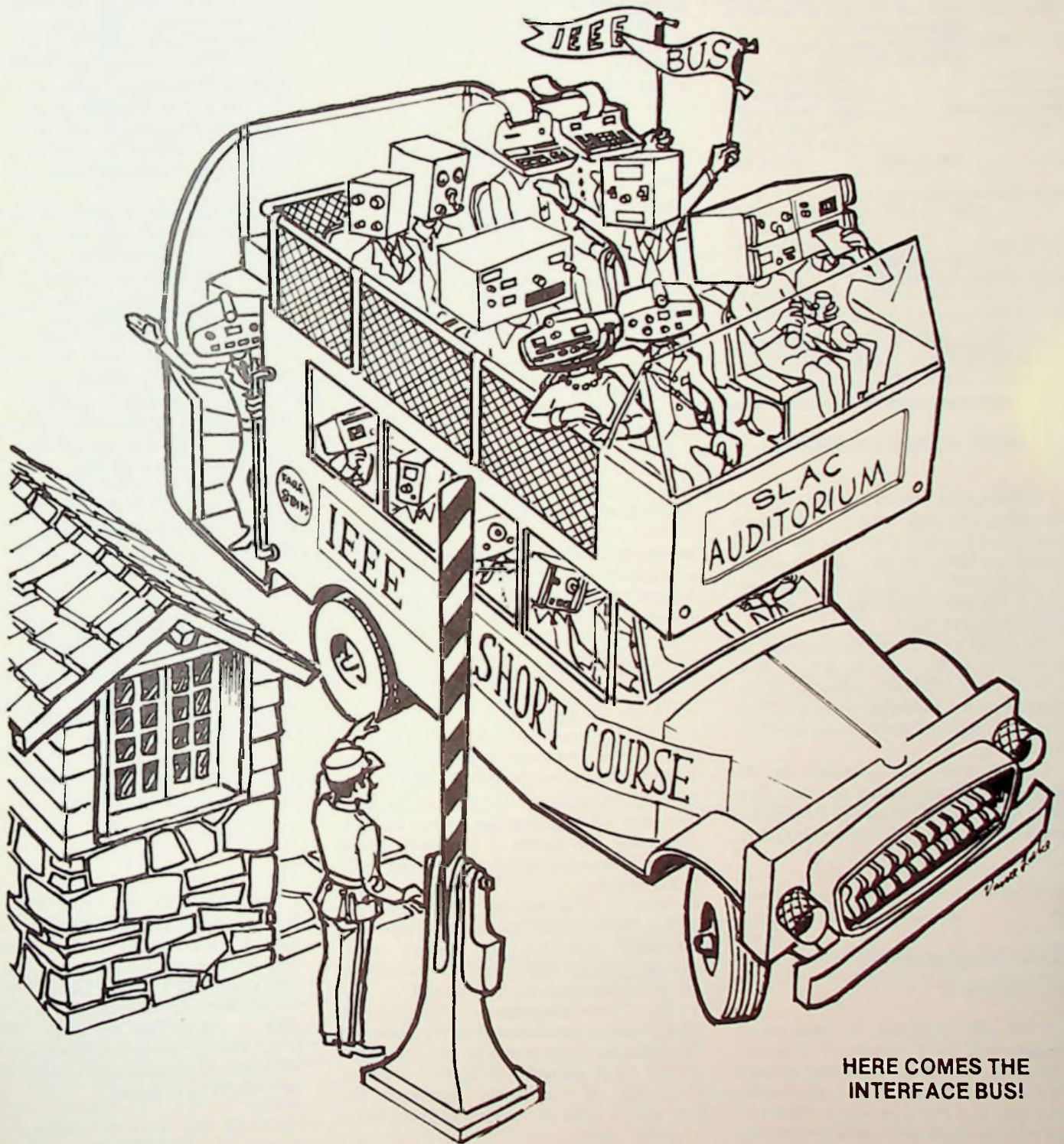
Contact p.wesling@ieee.org



SAN FRANCISCO BAY AREA COUNCIL THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

Grid

NOVEMBER 1975



HERE COMES THE
INTERFACE BUS!

On Friday, November 14, the Santa Clara Valley Section presents an IEEE one-day tutorial course: "Simplified Automated Test and Measurement Systems via the New IEEE Standard 488-1975 Digital Interface Bus" at SLAC Auditorium. About catching the bus, see Page 3.



volume 22
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NOVEMBER 1975

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JANUARY, FEBRUARY GRID DEADLINES

Thanksgiving comes at the end of November this year, and the Christmas-New Year's hiatus is always at the end of December. Both cut into days available for production for the GRID. Mails are slow in December. You want your January GRID before January 1.

So we have to advance the deadlines for the January GRID. Copy for articles must be in by noon Wednesday, November 26. Information for inclusion in the Calendar must reach Jean Helmke by noon Monday, December 1.

On the other hand, deadlines for the February GRID are to be a day later than usual: noon Friday, January 2, for articles; noon Monday, January 5, for the Calendar.

Career Management for Engineers

A one-day workshop for experienced engineers will be a feature of Engineers Week 1976. Aimed at improving engineer utilization while he maintains control of his career path in a changing world, the workshop will introduce techniques for answering four basic questions:

- *What do you want to do?* Motivators are identified, recognized as part of individual professional resources and means to use motivators as building blocks in career planning are explored.

Professional Activities Committee Column

PATENT AGREEMENTS and trade secrets, especially in relation to employment contracts, are very much in the news these days. The IEEE has done some work toward a standard agreement, and new legislation, that would better protect the rights of the employee and the employer, and redefine the balance of these rights.

This project is in danger of dying for lack of manpower. If you would like to see it continued, call Gerry Parsons, at (415) 433-4150.

MANPOWER PLANNING and development Committee of USAB is establishing a western branch. Coordinator will be Gene Knowles, of Bellevue, Washington. This committee specializes in areas having to do with the demand and supply of engineers, and in planning for future demand. This includes mid-career problems, studies and models of future supply and demand, occupational titles, and interfacing with other societies, government agencies, and academia. For further contact, call the number at the end of this column.

EMPLOYMENT REFERRAL SERVICE

IEEE members seeking new positions get current lists of job openings by sending a stamped #10 business envelope to the Council Office (see left column). The system works.

- *Where do you want to practice your profession?* People, places and things, as part of the work environment, are examined as they relate to job satisfaction.
- *How do engineers block their careers?* The view of engineers by others and by themselves and means to overcome those concepts blocking engineers' careers will be examined.
- *How do YOU manage development of YOUR career path?* Specific techniques to formulate strategies for dealing with change, for goal setting and for individual career management will be explored.

The Career Management Workshop, a pilot project in professional career planning for engineers, is sponsored by the American Society for Engineering Education and the University of California Extension in conjunction with the engineering societies of the Bay Area.

The date, time and location of the session will be announced in the near future. A nominal charge will be made for workshop costs and lunch. Further details may be obtained from D.L. Ledbetter at (415) 764-5190 or 764-4384.

Employers may publish their job openings by sending a written description to the same address. A charge of \$35 per job listing to employers covers clerical costs. These bulletins come out at approximately two-week intervals.

STUDENT SECTION IN SPECTRUM?

There has been some discussion of the idea. It would probably be a replacement for the current quarterly Student Newsletter, and it might do better what the old IEEE Student Journal tried to do, before it folded some years ago.

A student section in SPECTRUM now appears unlikely. If you are a Student Member and would like to see one, call or write David Hanttula, ISS-Sperry/Univac, M/S 30407, 10435 N. Tantau, Cupertino, CA 95014; (408) 257-6620, Ext. 2742 or 2738.

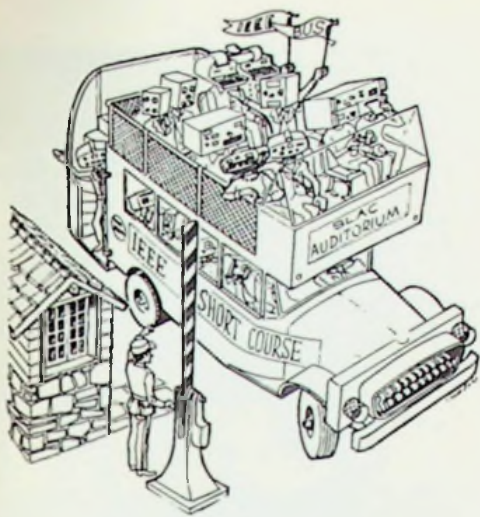
Tell him what you would like it to include.

NOVEMBER MEETING of the PAC of the Santa Clara Valley Section will begin at 7:30 PM, Monday, November 17, at Hewlett-Packard, Building 5, 1501 Page Mill Road, Palo Alto. The discussion will cover patent agreements and employment contracts, PAC employment services, professional registration, current legislation of importance to IEEE members, and other items falling in the area of professional activities. All IEEE members are invited.

LONG ISLAND SECTION PAC is running another survey of its membership. (The Bay Area survey recently completed was based on an earlier survey run by Long Island.) It would be interesting to compare the results of this new survey with the results obtained earlier and with the results of our survey. If we can arrange to do that here, in this column, we will.

ELSEWHERE IN THIS ISSUE you will find a page of graphs showing the distribution of the results of the Bay Area membership survey conducted recently by the PAC and compiled by Rich Duke. We think the results are very instructive, and serve as a clear warning that we in the IEEE have a long way to go before we begin to satisfy the needs of our members in any area except technical publications.

HAVE YOU ANY questions on items in this column; or would you like to find out more about your local section Professional Activities Committee? Call Michael Ward at (408) 246-4300, Ext. 2316.



Here Comes The Interface Bus!

IEEE ONE-DAY TUTORIAL SHORT COURSE

"Simplified Automated Test and Measurement Systems via the New IEEE Standard 488-1975 Digital Interface Bus"

Friday, November 14

SLAC Auditorium

You have a cordial invitation to participate in the one-day Tutorial Short Course on the IEEE Digital Interface Standard. It's to be presented 8:30-4:30, Friday, November 14, at SLAC Auditorium, Sand Hill Road, Menlo Park.

The new IEEE interface bus is a byte-serial structure. It provides a versatile, high-performance way to interconnect a wide variety of products into a cost-effective instrumentation system.

The Santa Clara Valley Section has arranged this short course to familiarize the practicing engineer with the new interface standard from the applications point of view. The course also covers some design topics. Engineers considering benchtop instrument-controller systems for automated measurements will find the course of immediate interest.

COURSE CONTENT AND SPEAKERS

Technical topics to be covered include the Data Bus, the Control Bus, the Transfer Bus, and the Addressing Concept. The "three-wire handshake" that keeps transfers asynchronous, to accommodate both high- and low-speed devices, will get detailed explanation.

Some practical aspects of designing to bus provisions will be introduced. Two discussions of working systems for testing and measurement will cover applications to real-world problems.

Focus of the course is on practical, useful knowledge of the new interface. The planned roster of speakers includes engineers from Hewlett-Packard and from other firms in the Bay Area: Jane Evans, course organizer; Ruben Weaver, GTE Lenkurt; Robert Huenemann, United Air Lines; Tom Coates, Allen Foster, and George Stanley.

TO CATCH THE BUS

To get further information, you can fill out and mail the postcard below; or call Jean Helmke, IEEE Office (415) 327-6622. But enrollment is limited; so, to assure that you "catch the bus", mail the completed card below with your check made out to IEEE. Address the envelope as shown on the card.

FEES

For registration by mail: IEEE members, \$45; Student members, \$25; non-members, \$55. Late registrations will be accepted at the door, subject to availability of space, at the following rates: IEEE members, \$60; non-members, \$70. The fee covers lunch to be served by SLAC.

STANDARD IEEE 488-1975

Interest in the IEEE interface system as a practical standard for programmable instrumentation has been significant. A two-part article published in the IEEE SPECTRUM (November 1974; May 1975) and available as a reprint (No. X75-052) covers the specific objectives of the interface, its basic feasibility criteria, and its manner of organization. At WESCON 75, a technical session, "Instrument Interfacing with the IEEE Standard Bus", reviewed basic concepts and illustrated use of the Standard in instrumentation products and systems now on the market.

NOVEMBER 1975

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See CALENDAR for Program Arrangements

GRID - 3

"NUCLEAR CARDIOLOGY"

—Designed to inform Nuclear Medicine Physicians, Physicists and Engineers of Clinically significant developments in the rapidly expanding field of Nuclear Cardiology. Course is acceptable for 5 hours of Category I credit towards the certificate in Continuing Education for the CMA and AMA.

Sat., Nov. 22, 9:00 a.m.-4:00 p.m.
Cole Hall
UC San Francisco

Program

"Impact of Nuclear Medicine on the Diagnostic and management of Cardiovascular Disease" — E. Botvinick, UCSF

"Radiopharmaceuticals for Studying Heart Disease" — J.F. Lamb and H.S. Winchell, Medi Physics, Inc.

"Imaging Regional Distribution of Myocardial Perfusion" — P. Weber, Kaiser Permanente

"Dynamic Studies of Central Circulation Using Radioisotopes" — P. Weber, Kaiser Permanente

"Scintigraphic Detection of Wall Motion-Abnormalities" — M.V. Green, NIH, Bethesda

"Acute Myocardial Infarct Imaging" — D.M. Shames, UCSF

Fees:	Before Nov. 12	At Course
IEEE Member	\$20	\$30
Non-Member	25	35

Fee includes lunch and course proceedings.

Course Chairman: L. Kaufman, UCSF Medical Center, San Francisco 95145

Program Coordinator: D.M. Shames, UCSF Medical Center, San Francisco

Co-Sponsor: UCSF School of Medicine
For further program information contact: L. Kaufman, (415) 666-1521.

"RADIONUCLIDES IN THE ENVIRONMENT: MEASUREMENTS AND MONITORING"

—An intensive one-day workshop on state-of-the-art methods and instrumentation for radiological methods and monitoring.

Saturday, November 22
9:15 a.m.-4:15 p.m.
Stanford Linear Accelerator Center
Palo Alto, Calif.

Program

Opening Remarks — D.P. Serpa, Pacific Gas and Electric, San Ramon, CA.

"In-Situ Spectrometric Methods for Quantifying Specific Radionuclides" — L. R. Anspaugh, LLL

"Current Technology in Sampling for Airborne Radionuclides" — H.F. Schulte, LASL

"Methods in Environmental Sampling for Radionuclides" — R.C. Ragaini, LLL

"Current Methods for Laboratory Analysis of Environmental Levels of Radioactivity" — N.A. Wogman, PNWL

"Thermoluminescence Dosimetry: Methods and Experiences at Reactor Sites" — G.D.P. Burke, HASL-ERDA

Panel Discussion		
Fees:	Before Nov. 12	At Course
IEEE Member	\$30	\$35
Non-Member	35	40

Fee includes lunch, transportation, and course proceedings.

Course Chairman: P.L. Phelps, Lawrence Livermore Lab, Livermore, CA 94550.

Program Coordinator: J.E. McLaughlin, Health and Safety Laboratory, NY.

For further program information please contact: P.L. Phelps, (415) 447-1100, Ext. 8053 or 3561.

TUTORIAL SHORT COURSE PROGRAM

On SATURDAY, November 22, two outstanding One-Day Short Courses will be offered as an adjunct to the main Symposia. These courses are tutorial in nature and are designed to update non-specialists on new developments in areas of high current interest. The Proceedings of both courses will be published as the April 1976 IEEE Transactions on Nuclear Science, a copy of which will be mailed to all course registrants. A brief summary of each course is given to the left.

SYMPOSIUM ORGANIZERS

General Chairmen: NSS, R.S. Larsen (SLAC); NPSS, J. Forster (G.E.)

Program Chairmen: NSS, D.A. Mack (LBL); NPSS, J. Osborn (G.E.)

Arrangements: L.J. Wagner (LBL).
Registration and Exhibits Chairman: R.A. Gearhart (SLAC).

Sponsors: IEEE Nuclear and Plasma Sciences Society, IEEE Power Engineering Society, Energy Research and Development Administration, and National Aeronautics and Space Administration.



"SIMPLIFIED AUTOMATED TEST/MEAS SYSTEMS"

Friday, November 14, 8:30-4:30

SLAC Auditorium, Sand Hill Road

I enclose my check for \$ _____ Please preregister me for the course.

Please send further information.

Print Name _____ Member No. _____

Address _____

City _____ Zip _____

Telephone: Office _____ Home _____

APPLICATION FORM Please enroll me in

- "Nuclear Cardiology"
- "Radionuclides in the Environment: Measurements and Monitoring"

Name _____

IEEE Member No. _____

Address _____

_____ Zip _____

I enclose a check for \$ _____ payable to IEEE 1975 NSS. (Mail to R.A. Gearhart, Bin 20, SLAC, P.O. Box 4349, Stanford, CA 94305.)

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A WORD ABOUT AUTO INSURANCE

To: Members of I.E.E.E.

I have sold insurance most of my adult life. I learned long ago that people want their insurance information straight and to the point. They want to be treated fairly and courteously, and they want good service. But most of all they want to know they are buying a worthwhile product at the lowest possible cost.

It all boils down to *quality and price.*

20th Century Insurance Company was created in 1957 to give California drivers the best possible automobile protection at the lowest possible rates. Our concept is simple. We feel that a good automobile insurance risk should pay a premium based on losses derived from other good risks. Of course, making this actually work has a lot to do with how an insurance company is operated.

How do we do it? We eliminate the salesman. We see no reason for a middleman between 20th Century and you. More important, eliminating sales commissions reduces operating expenses. Reducing operating expenses ultimately reduces the insurance premium. Furthermore, by insuring only responsible drivers such as members of I.E.E.E., we keep accident claims to a minimum. The rates we charge policyholders, naturally, are related to the cost of paying for claims.

The net result is *20th Century rates are generally lower than any other auto insurance rates in California.*

Our way of doing business has another benefit. Direct contact with our customers helps improve our efficiency and our service. And we find that people like this personal service.

Are 20th Century Policyholders happy with our insurance and with the price? *More than 95% of our customers renew their policies month in and month out;* we believe there is no better evidence of our ability to provide outstanding protection at outstanding savings.

I also believe there are many, many responsible California engineers and scientists who qualify for 20th Century insurance and who will find our program ideally suited to their needs. We look forward to the opportunity of serving you.

Sincerely yours,

Louis W. Foster, President and Chairman
20th Century Insurance Company

IEEE 1975 NUCLEAR SCIENCE SYMPOSIUM and NUCLEAR POWER SYSTEMS SYMPOSIUM

November 19-21

Sheraton Palace Hotel

San Francisco

EMPHASES: Nuclear Science Symposium: New technological developments in nuclear detectors, circuits, and instrumentation systems; applications in experimental and space physics, nuclear medicine, environmental measurements and reactor instrumentation. Nuclear Power System Symposium: control, instrumentation, and electrical systems for nuclear generating plants.

POSTER SESSIONS: Papers presented on a display board allow more time, more papers, and more in-depth discussion with

the author. In recent symposia, this technique has elicited excellent response.

SHORT COURSES in conjunction with the Symposia will be presented on Saturday, November 22: **Nuclear Cardiology and Radionuclides in the Environment: Measurement and Monitoring.** See Page 4.

DETAILED PROGRAM AND REGISTRATION FORM: Contact R.A. Gearhart, SLAC, Stanford University, Box 4349, Stanford, CA 94305; (415) 854-3300, Ext. 2709.

PROGRAM SUMMARY

Nuclear Science Symposium

Nuclear Power Systems Symposium

Wed. 11/19
9:00-12:00

Opening Joint Session. Invited Papers: "Nuclear Energy and Nuclear Weapons: Are They Inevitably Linked?" - - Herbert York, UCSD; "Review of the American Physical Society Light Water Reactor Safety Study" - - Robert J. Budnitz, LBL; "Image Quality and Patient Exposure In Diagnostic Radiology" - - Kurt Rossmann, School of Medicine, U. of Chicago; "The Pioneer Encounters with Jupiter" - - James H. Trainer, Goddard, NASA.

12:00- 2:15

Symposium Luncheon. Guest Speaker: Dr. James L. Liverman, ERDA, "The Future Role of the National Laboratories in Energy Research and Development".

2:30- 5:30

SESSION 2A - - Environmental Applications. Invited Paper: "In Situ Determinations of Environmental Plutonium and its Related Nuclides" - - H.L. Beck, J.E. McLaughlin, K.M. Miller.

SESSION 2B - - Cadmium Telluride Detectors.

SESSION 2C - - Safeguarding of Nuclear Fuels. Invited Papers: "Improvement of Safeguards in Plutonium Fuel Recycling" - - Seymour H. Smiley, James Power, NRC; "Environmental Hazards in High-Level Radioactive Waste Disposal" - - Bernard L. Cohen, U. of Pittsburgh.

SESSION 1 - Operating and Design Experience with Control, Instrumentation and Electrical Systems at Nuclear Power Plants. All papers invited.

Thurs. 11/20
9:00-12:00

SESSION 3A - - Circuits. Invited Papers: "FET Design Considerations for Low-Noise Preamplifiers" - - R. Fair, Bell Telephone.

SESSION 3B - - Reactor Instrumentation.

SESSION 4 - - Poster Session: Nuclear Medical Science I.

SESSION 2A - Status Report on Nuclear Power Standards by PES/NPEC. All papers invited.

SESSION 2B - Reactor Instrumentation. Joint meeting with NSS Session 3B.

1:30- 4:00

SESSION 5 - - Poster Session: Physics Instrumentation and Reactor Instrumentation.

SESSION 6A - - Semiconductor Detectors.

SESSION 6B - - Space Physics Instrumentation.

SESSION 3 - Panel Discussion of Regulatory Guides 1.89 and 1.75.

Fri. 11/21
9:00-12:00

SESSION 7A - - Instrumentation Systems. Invited Paper: "The Brookhaven Reactor Experiment Control Facility: A Distributed-Function Computer Network" - - D.G. Dimmler, N. Greenlaw, M.A. Kelley, D.W. Potter, S. Rankowitz, F.W. Stubblefield, BNL.

SESSION 7B - - Detectors for High-Energy Physics.

SESSION 8 - - Poster Session: Nuclear Medical Science II - - environmental Instrumentation.

SESSION 4 - Emergency Radiation Planning and Measurement Systems. All papers invited.

2:00- 4:00

Concluding Joint Session. Invited Paper: "Distributed Computer Intelligence in Data Acquisition and Control" - - C.W. Rose, J.D. Schoeffler, Case Western University; Panel Discussion: "Applications of Microprocessors in Nuclear Instrumentation" - - F.A. Kirsten, Moderator.

The September letter to all Oakland-East Bay Section members resulted in a 10% response. Your input is helping to determine future Section activities. There appears to be considerable interest in the formation of several Group or Society Chapters in the East Bay. The most promising are Industrial Applications, Power Engineering, Computer, Engineering in Medicine and Biology, Circuits and Systems, Communications, and Control Systems.

Dark-horse possibilities are Acoustics, Speech and Signal Processing, Electron Devices, Instrumentation and Measurement, Microwave Theory and Techniques, and Systems, Man and Cybernetics. "Chapter Organizers" will be completing their work as you read this. We hope to announce in the next GRID that at least three new chapters will be in operation by early 1976.

General Section meetings will continue to be on midweek evenings, in the Oakland-Berkeley area, in accordance with the results of the survey. An occasional luncheon or dinner meeting will be scheduled to provide variety. Most subjects will be of general interest, with some tours.

NEEDED: A volunteer to serve as Education Chairman for the Section. Please contact Dale Johnson, (415) 835-8500, Ext. 311, if you can help.

Who is the Membership contact person where you work? The Membership Development Committee is establishing this contact at all locations with several IEEE members. Ask around; if you don't find out who he is, call Alex Stripeika at 447-1100, Ext. 7821.

OEBS

Microprocessors: Applications and Interfacing

Nowhere is the rapid advance of technology more evident than in integrated circuits. The hand-held calculator and the portable color television are but two examples of products that were thought of only in connection with Buck Rogers and Dick Tracy a few years ago. But, in terms of long term societal impact, the microprocessor will surely overwhelm the others as the most significant technological advance of the decade. The "computer in every home", widespread household two-way data terminals, a literal revolution in

retailing, and industrial applications beyond imagination are all brought a large step closer by the availability of the low cost, small size, reliable computing power of the microprocessor.

Thampy Thomas of Intersil, Inc., a leading CMOS microprocessor producer, will present to the Oakland-East Bay Section an insight into the capabilities of microprocessors and will detail some techniques used in interfacing them to memories and input/output hardware. As a Manager of Systems Development, he will be able to provide first-hand information on where the industry is heading both in component capability and application expansion.

Reservations are required by November 14 for either the meeting or the dinner preceding.

SECTION NEWS

San Francisco

Assemblyman Greene's Bill (AB 2166) concerning revision of legislation delaing with regulation and registration for Professional Engineers in California vitally affects members of IEEE. SF's Section PAC Chairman is coordinating with the other Sections on this bill - and formulating plans to track other legislative issues that might affect us. You will be hearing more on this subject.

The SF Section's October meeting with Ed Walker was very appropriate. We plan to have an up-date in the near future, because this topic seems to change frequently.

Bob Johnson has volunteered to be the SF Section's Educational Chairman. We expect a viable educational program soon; so be looking for announcements.

Our Student Activities Chairman has been contacting various educational institutes. He expects to get more students involved in the actual operations of IEEE. The transition between Student Member and Member would be less traumatic if students were aware of how IEEE can enhance their engineering careers.



Plans are set for our Fall Technical Seminar, a one-day tutorial short course on simplified automated test systems. See the cover and page 3 and 4 of this issue of the GRID.

The Section is actively pursuing improved contact with all its members. Our six "Tech-Reps", who informally represent all twenty of the Group Chapters on the Executive Committee (and are voting members thereof), have met to help revitalize the less active chapters. Specifically, they are seeking interested people to help in ASSP, Circuits and Systems, IECL, and Control Systems. Members of these Group Chapters who can help in promoting some new activity are urged to contact their chairman or "Tech-Rep" (see the September GRID for names).

In line with this theme, all Group Chapter/Society Chairmen or Section members are welcome at any Executive Committee Meeting. These are regularly on the second Monday of each month at 5:00 p.m. The meeting place is announced by mail in the minutes or is available from the Secretary. Continued regular use of the "Tech-Reps" to coordinate group activities is planned; so get to know your representative on the Executive Committee and send your ideas along.

CAS ORGANIZATION MEETING IN SC VALLEY

On paper, the Circuits and Systems Chapter of the Santa Clara Valley Section is the largest chapter in the section, with 585 currently-registered members. But it has become dormant in the past year.

An attempt to revivify and reorganize the chapter will occur November 11 at the Lockheed Auditorium in Palo Alto. Chapter members and other interested IEEE members can contribute their suggestions by attending and by communicating with Charles Schmidt, GTE Lenkurt, (415) 591-8461, Ext. 549; or Ken Jenkins, Lockheed Research, (415) 493-4411, Ext. 45031.

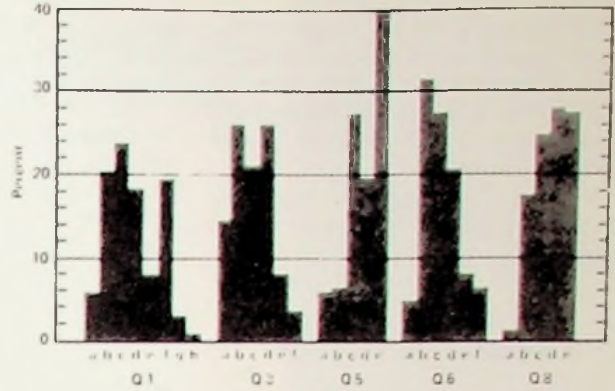
SCV SECTION - PAC

A panel of members of the SCV Section PAC, moderated by Chairman Jack Nawrocki, will present a status report of their work in your behalf, on December 4. Here is a chance to learn about legislation pending in Sacramento that defines requirements for the registration of engineers and even defines who may use "Engineer" as a title. Also to be discussed are employment services, other State Legislature Activity, and opportunities for IEEE members to serve their profession.

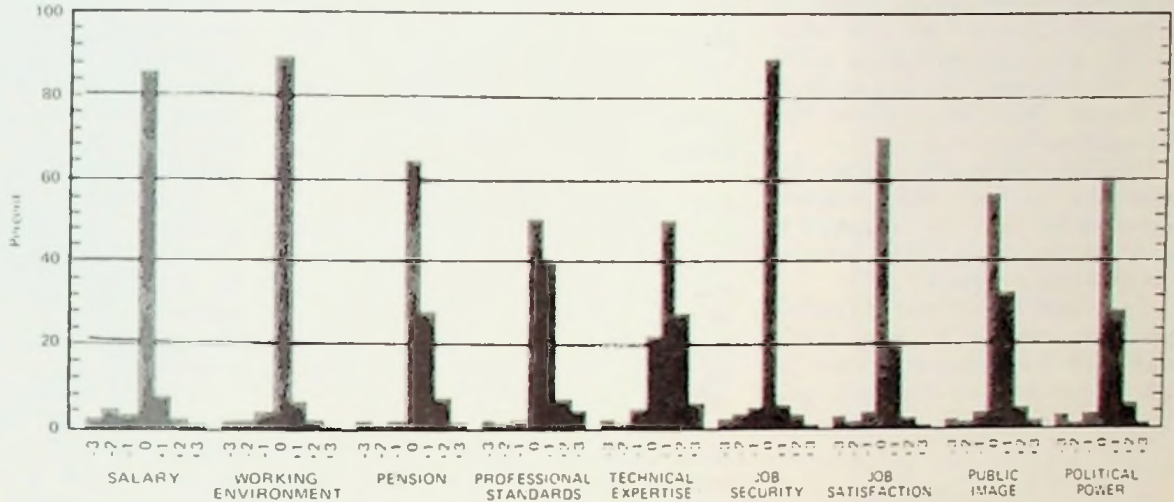
The meeting is of general interest to all Section members. It is an excellent forum for exchanging ideas on professional topics.

PROFESSIONAL ACTIVITIES SURVEY RESULTS

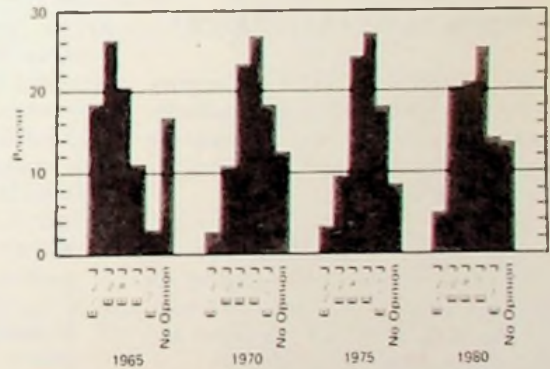
- Q.1** How would you rate the results obtained to date by IEEE with regard to pension legislation? a - excellent; b - good; c - acceptable; d - poor; e - a failure; f - I am not up to date on this issue; g - no opinion; h - IEEE should not be involved.
- Q.3** How would you change the present method of selecting National IEEE officers? a - leave unchanged; b - I am not familiar with the present system; c - multiple choice from the Nominating Committee; d - PAC should investigate alternatives; e - no opinion; f - other.
- Q.5** To what extent should PAC become involved in the apparent age bias problem for engineers over 40? a - none; b - some; c - reasonable; d - great; e - very great.
- Q.6** What portion of your IEEE dues would you agree to have allotted for PAC activities? a - none; b - 1-20%; c - 20-40%; d - 40-60%; e - 60-80%; f - over 80%.
- Q.8** How often would you be willing to receive and return a questionnaire such as this one? a - never; b - once a year; c - twice a year; d - four times a year; e - more than four times a year.



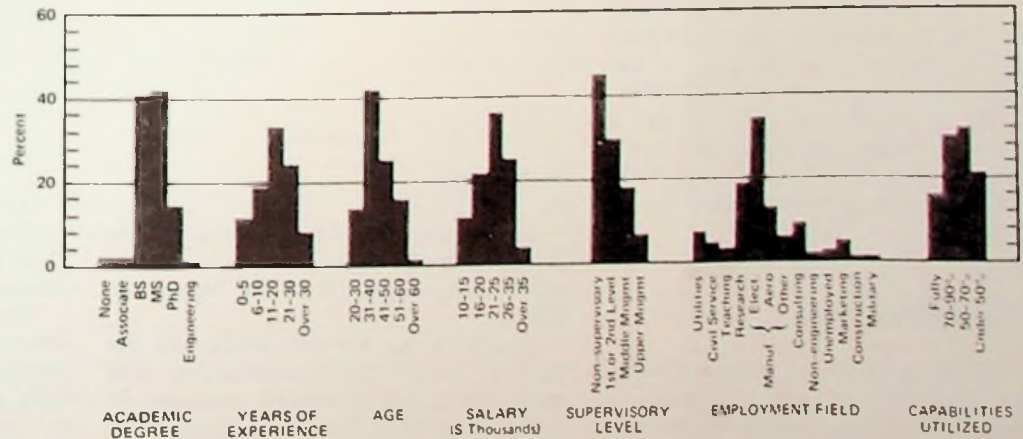
- Q.2** What is your estimate of IEEE's effect on you and your job with respect to the following categories? Consider the composite effect to date in each category.



- Q.4** What is your estimate of the supply and demand picture for your particular experience level? ("E" stands for "number of engineers", and "J" for "number of jobs".)



- Q.7** Profiles of respondents to this questionnaire.



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General Section meetings will continue to be on midweek evenings, in the Oakland-Berkeley area, in accordance with the results of the survey. An occasional luncheon or dinner meeting will be scheduled to provide variety. Most subjects will be of general interest, with some tours.

NEEDED: A volunteer to serve as Education Chairman for the Section. Please contact Dale Johnson, (415) 835-8500, Ext. 311, if you can help.

Who is the Membership contact person where you work? The Membership Development Committee is establishing this contact at all locations with several IEEE members. Ask around; if you don't find out who he is, call Alex Stripeika at 447-1100, Ext. 7821.

OEBS

Microprocessors: Applications and Interfacing

Nowhere is the rapid advance of technology more evident than in integrated circuits. The hand-held calculator and the portable color television are but two examples of products that were thought of only in connection with Buck Rogers and Dick Tracy a few years ago. But, in terms of long term societal impact, the microprocessor will surely overwhelm the others as the most significant technological advance of the decade. The "computer in every home", widespread household two-way data terminals, a literal revolution in

SECTION NEWS

San Francisco

Assemblyman Greene's Bill (AB 2166) concerning revision of legislation dealing with regulation and registration for Professional Engineers in California vitally affects members of IEEE. SF's Section PAC Chairman is coordinating with the other Sections on this bill - and formulating plans to track other legislative issues that might affect us. You will be hearing more on this subject.

The SF Section's October meeting with Ed Walker was very appropriate. We plan to have an up-date in the near future, because this topic seems to change frequently.

Bob Johnson has volunteered to be the SF Section's Educational Chairman. We expect a viable educational program soon; so be looking for announcements.

Our Student Activities Chairman has been contacting various educational institutes. He expects to get more students involved in the actual operations of IEEE. The transition between Student Member and Member would be less traumatic if students were aware of how IEEE can enhance their engineering careers.



retailing, and industrial applications beyond imagination are all brought a large step closer by the availability of the low cost, small size, reliable computing power of the microprocessor.

Thampy Thomas of Intersil, Inc., a leading CMOS microprocessor producer, will present to the Oakland-East Bay Section an insight into the capabilities of microprocessors and will detail some techniques used in interfacing them to memories and input/output hardware. As a Manager of Systems Development, he will be able to provide first-hand information on where the industry is heading both in component capability and application expansion.

Reservations are required by November 14 for either the meeting or the dinner proceeding.

Plans are set for our Fall Technical Seminar, a one-day tutorial short course on simplified automated test systems. See the cover and page 3 and 4 of this issue of the GRID.

The Section is actively pursuing improved contact with all its members. Our six "Tech-Reps", who informally represent all twenty of the Group Chapters on the Executive Committee (and are voting members thereof), have met to help revitalize the less active chapters. Specifically, they are seeking interested people to help in ASSP, Circuits and Systems, IECE, and Control Systems. Members of these Group Chapters who can help in promoting some new activity are urged to contact their chairman or "Tech-Rep" (see the September GRID for names).

In line with this theme, all Group Chapter/Society Chairmen or Section members are welcome at any Executive Committee Meeting. These are regularly on the second Monday of each month at 5:00 p.m. The meeting place is announced by mail in the minutes or is available from the Secretary. Continued regular use of the "Tech-Reps" to coordinate group activities is planned; so get to know your representative on the Executive Committee and send your ideas along.

CAS ORGANIZATION MEETING IN SC VALLEY

On paper, the Circuits and Systems Chapter of the Santa Clara Valley Section is the largest chapter in the section, with 586 currently-registered members. But it has become dormant in the past year.

An attempt to revivify and reorganize the chapter will occur November 11 at the Lockheed Auditorium in Palo Alto. Chapter members and other interested IEEE members can contribute their suggestions by attending and by communicating with Charles Schmidt, GTE Lenkurt, (415) 591-8461, Ext. 549; or Ken Jenkins, Lockheed Research, (415) 493-4411, Ext. 45031.

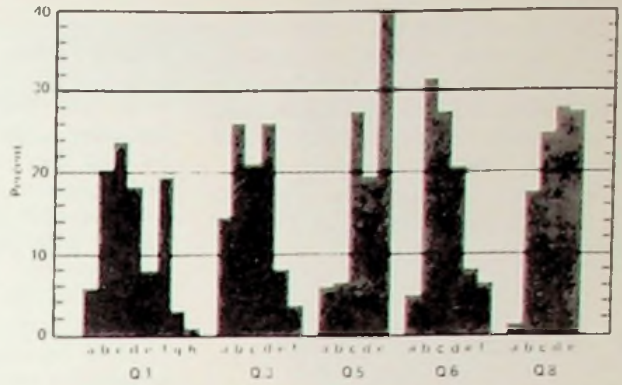
SCV SECTION - PAC

A panel of members of the SCV Section PAC, moderated by Chairman Jack Nawrocki, will present a status report of their work in your behalf, on December 4. Here is a chance to learn about legislation pending in Sacramento that defines requirements for the registration of engineers and even defines who may use "Engineer" as a title. Also to be discussed are employment services, other State Legislature Activity, and opportunities for IEEE members to serve their profession.

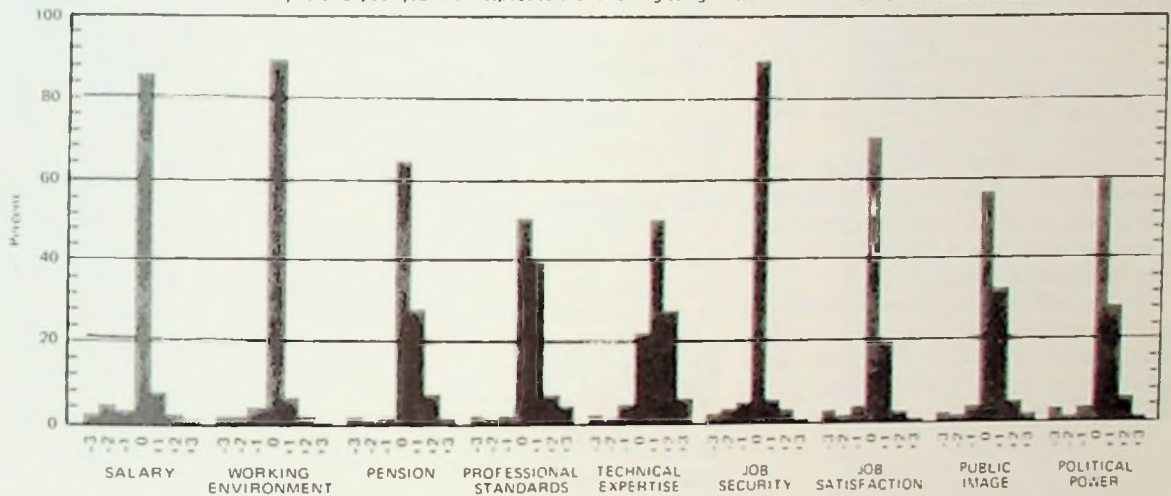
The meeting is of general interest to all Section members. It is an excellent forum for exchanging ideas on professional topics.

PROFESSIONAL ACTIVITIES SURVEY RESULTS

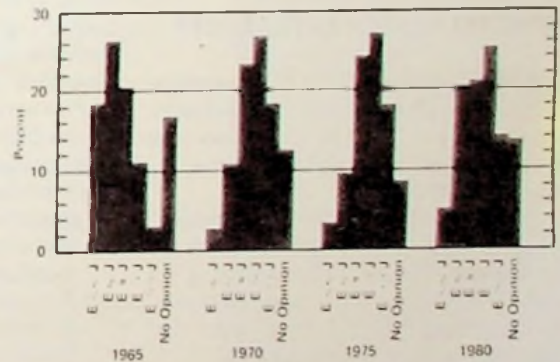
- Q.1** How would you rate the results obtained to date by IEEE with regard to pension legislation? a - excellent; b - good; c - acceptable; d - poor; e - a failure; f - I am not up to date on this issue; g - no opinion; h - IEEE should not be involved
- Q.3** How would you change the present method of selecting National IEEE officers? a - leave unchanged; b - I am not familiar with the present system; c - multiple choice from the Nominating Committee; d - PAC should investigate alternatives; e - no opinion; f - other
- Q.5** To what extent should PAC become involved in the apparent age bias problem for engineers over 40? a - none; b - some; c - reasonable; d - great; e - very great
- Q.6** What portion of your IEEE dues would you agree to have allotted for PAC activities? a - none; b - 1-20%; c - 20-40%; d - 40-60%; e - 60-80%; f - over 80%
- Q.8** How often would you be willing to receive and return a questionnaire such as this one? a - never; b - once a year; c - twice a year; d - four times a year; e - more than four times a year



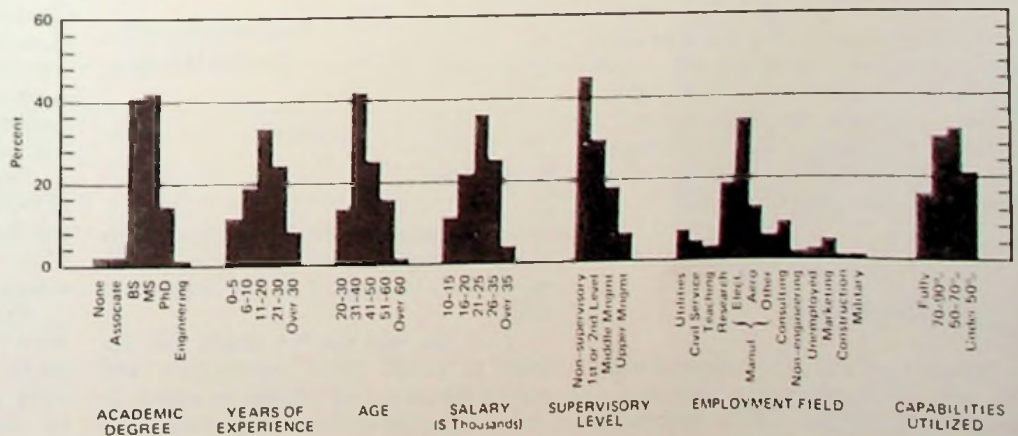
- Q.2** What is your estimate of IEEE's effect on you and your job with respect to the following categories? Consider the composite effect to date in each category.



- Q.4** What is your estimate of the supply and demand picture for your particular experience level? ("E" stands for "number of engineers", and "J" for "number of jobs".)



- Q.7** Profiles of respondents to this questionnaire.



Whither Grid ?

The Editorial Board has received several cogent suggestions on possible additions and improvements to the GRID. Each may involve policy decisions requiring decisions not only by the Board but also by Council officials and members.

Some of these suggestions appear on this page. We'd like to know your reactions to them.

A "REGENERATION" COLUMN?

Two thoughtful letters have reached this office in response to the IEEE stand on the California Nuclear Power Plant Initiative. They appear, somewhat edited, on this page. Unintentionally, the lead article in the October GRID dealt somewhat with the points these letters raise.

Should the GRID carry advocacy correspondence on controversial subjects? Send in your opinion - - on that question or on any of interest to you. Be brief (not more than 100 words) and specific.

Try to write so your letter can usefully appear any time within several months when space is available. We reserve the right to edit. If we do violence to your reasoning, let us know!

PERSONAL CAREER ASSISTANCE?

A short article on PATCA also appears on this page. This article will undoubtedly interest many of you; but it lies near the border between news and advertising - - wherever that border is.

And a letter in our initial "Regeneration" column suggests "Position Wanted" ads for unemployed members. We're printing his letter but omitting his name; otherwise, he'd be getting the ad he offers to pay for! What do you think of his suggestion?

Should the GRID carry announcement cards for consultants? They could be standard in size - - say one column inch - - and published, in rotation, as space is available.

For some time, the GRID has had a policy of no advertising (well, almost none). The questions raised here are ways of exploring just what that policy means.

OTHER FEATURES?

Should the GRID carry reviews of books that other IEEE publications might miss - - books on "borderline" topics, for instance, or on specific California questions? Who should suggest them? Who choose the reviewers?

What other services can the GRID provide, and the GRID alone? We need your suggestions.

Initial "Regeneration" Column

To the Editor:

In the Section Correspondence of September 1, 1975, the members of IEEE are told their organization has gone on record against the Nuclear Power Plant Initiative, and are furthermore asked to start a grass-roots movement to spread that viewpoint.

I found this message intolerable for two good reasons.

First, the whole point of the Initiative is to force the safety of the nuclear plant fuel cycle out into the open for full public scrutiny. If the industry can live up to the constraints set out in the Initiative, plants will be allowed to proliferate. We have been told for a decade or more that nuclear power is safe. The time has come, now, before we as a nation are too deeply committed to nuclear energy, for the public to make an intelligent decision.

The issuance of a decree by IEEE simply "turns off" IEEE as a forum for discussion and debate. We have resources that could be put to constructive use in impartially communicating to the public both sides of the nuclear issue, as the nuclear series in SPECTRUM has tried to do.

Second, the IEEE stand took no account of the many IEEE members who favor the Initiative. There is heavy debate in scientific circles as to the economy and safety of the nuclear power option. Among IEEE members there are many who are keenly concerned with these issues. A good portion wish to see the Initiative pass.

An IEEE position on a controversial and and profoundly important issue such as this *must* be either;

- Impartiality, with a commitment to educating the public to both sides of the question; or
- A qualified stand, giving the percentage of members who favor or oppose the initiative.

Paul Hernday (HP)
Project Manager

To the Editor:

I was dismayed to read your description of the California Initiative (Nuclear Safeguards Act) on page 9 of the September GRID.

You state that the Act would ask the State to curtail plant construction and reduce the output of existing reactors. In reality, it would do these things *only* if the reactors are not properly tested as they should be, *only* if materials transportation and waste disposal techniques are unsafe, and *only* if the utilities don't get adequate insurance against an accident they term as unlikely as a person being hit by a meteor.

I encourage you and your readers to obtain a copy of the Nuclear Safeguards Act and become familiar with it. An issue as important as this deserves to be referred to and discussed factually and completely.

Lance Goddard
Stanford Microwave Laboratory

To the Editor:

I'd like to suggest an addition to GRID. There are a number of unemployed engineers in the Santa Clara Valley; I myself was laid off last week. We can expect a certain amount of success in reading want ads, etc.; but I believe one of the greatest ways to find a new position is to make IEEE members aware of available talent among fellow engineers. I'd prefer to have all IEEE members know of my desires and capabilities; they are in a position to know of openings before they are advertised.

Specifically, I'd like GRID to make space available, perhaps at nominal charge, for "Position Wanted" ads. Presumably, such an ad would be 3-4 lines long, with a reference number in it. Anyone interested in that person could call the IEEE office for a match-up.

A disadvantage to this is that timeliness would be compromised. However, I think most engineers will spend 1-2 months trying to find a specific match to their skills and interests. And those who have been out of work for 3-6 months (many have been) would appreciate this new forum.

(Name Withheld)

CONSULTANTS FORM NEW ASSOCIATION

PATCA ("Professional and Technical Consultants Association") came into being to serve the special needs of technological consultants in Northern California. Its members include engineers, scientists, programmers, and management, marketing, manufacturing, and finance specialists.

Direct-mail and newspaper advertising is expensive, time-consuming, and ineffective for consultants; few use it extensively. Most rely almost entirely on referrals by existing clients and friends.

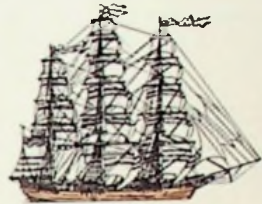
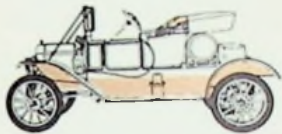
Potential clients have an even more severe problem. A new company, in particular, has no way of finding specifically qualified consultative help, especially in technical areas unfamiliar to the company.

A consultants' referral service may be a viable way to meet both these needs. PATCA is such a service. It is in Mountain View: (415) 961-1155. It charges potential clients no fees.

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CAN YOU QUALIFY? It's easy to find out. Just complete and mail the application form today and we'll send you a quotation showing what it would cost to insure with 20th Century. No obligation, of course. And no salesman will call.

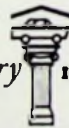
OTHER QUESTIONS: Just call our Home Office "Collect" and our friendly representatives are ready to talk with you and answer any questions you have. Monday through Friday, between 9 a.m. and 9 p.m. (yes, we will take evening calls, too). Just call our home office COLLECT—either (213) 277-1080 or (213) 879-2505.

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TECHNICAL COURSES AND SEMINAR

"Bicentennial Boston"

The Boston Section has dubbed its show next year "ELECTRO/76 (The IEEE Show in Bicentennial Boston)". It will take place May 11-14 in the Haynes Auditorium and the Sheraton Boston Hotel.

For further information, contact the ELECTRO/76 General Manager, William C. Weber, Jr., 3600 Wilshire Boulevard, Los Angeles, CA 90010.

"Frontiers In Education"

The IEEE Education Group and the Educational R&D Methods Division of ASEE, with participation by the University of Arizona College of Engineering, announce the 1976 Conference on "Frontiers in Education", October 25-27, 1976, Ramada Inn, Tucson, Arizona. The name of the Conference is its theme. Its purpose is to bring together persons concerned with education in academia, industry, and government for discussion of new developments and new directions in engineering education.

Papers are invited on any topics related to this general theme. Deadline is January 15, 1976.

One of the basic ideas of this Conference is to provide maximum opportunity for personal interaction and involvement, as opposed to passive listening to lectures. Proposals for workshops, panel discussions, and other types of interactive sessions are invited.

Authors wishing to present papers should send a synopsis (200-500 words) to:

Dr. E.R. Owen, Electrical and Electronic Engineering, California Polytechnic State University, San Luis Obispo, CA 93401

Two-Way Radio Show

A new trade show has been announced by EIA. Sponsored by its Citizens Radio Section, Communications Division, and scheduled for the Las Vegas Hilton, from March 30 through April 1, 1976, the new show and its accompanying seminars will provide an annual forum for the personal two-way radio communication industry, the fastest growing segment of electronic communication.

A Show Board chaired by Richard E. Horner, E.F. Johnson Company, will set show and seminar policy. John Sodolski, EIA Staff Vice President, Communications Division, will administer it.

Mr. Horner said, "The industry needs an annual marketplace where manufacturers can present a full spectrum of radio communications equipment including CB two-way radio transceivers, antennas, marine two-way radios, amateur radio products and equipment, scanning monitor receivers, testing and maintenance equipment as well as related products, components and services."

Televised MS Programs at Berkeley

Televised programs of study are now offered by the College of Engineering, University of California, Berkeley, via live transmission and delivered video tapes. They make it possible for working people to get the same instruction as students on the Berkeley campus.

Off-campus students do the same assignments and take the same examinations as on-campus students. They have the same privileges as on-campus students, including conferences with advisers and instructors and use of libraries and laboratories on campus.



Ash K. Gorwara

MIC DISCRIMINATORS

The Microwave Theory and Technique Society will hold a meeting at 8 PM on November 20th, 1975, at S.R.I. Building 44, to hear about the latest designs, techniques and performance results that have been achieved on various types of MIC discriminators in the frequency range of 1 GHz to 40 GHz. Four different discriminators namely, polar, line, phase and FM will be described and compared for performance and application. Also, measurement techniques for evaluating FM DISCRIMINATORS will be introduced.

The talk will be given by Ash. K. Gorwara, who is presently project supervisor on two research and development programs dealing with the design of X-brand Linear Discriminators and 40 to 50 GHz Planar Front Ends.

Mr. Gorwara has B.S.E.E., M.S.E.E., D.I.C. degrees from London University and has completed Ph.D. studies at Northeastern University, Mass.

Management of the show has been assigned to The Show Company International, 1605 Cahuenge Blvd., Los Angeles, CA 90028, (213) 463-4891. All inquiries concerning exhibit space should be directed to Mr. Robert Black at that address.

Off-campus students will normally take one course per quarter and can complete the degree in three years. The degree program areas in the Department of Electrical Engineering and Computer Sciences are:

- Physical Electronics;
- Systems;
- Computer Systems;
- Computer Software.

There are also programs in Industrial Engineering and Operations Research, Mechanical Engineering, and Nuclear Engineering.

Address inquiries to Assistant Dean for Graduate Student Affairs, College of Engineering, 312 McLaughlin Hall, University of California, Berkeley, CA 94720.

ED, PHP, R

Failure Mechanisms and Failure Analysis Techniques

The Electron Devices, Reliability, and Parts Hybrids and Packaging groups are jointly sponsoring a one-day tutorial course Saturday, November 15, from 9:00 to 4:30 in the Stanford Physics Lecture Hall. Speakers and their topics are:

- "Component-Level Failure Analysis and the Facilities Required" - - Don Hjelle (HP Data Systems Division)
- "Basic Tricks of Failure Analysis" - - Dick Kramer (National Conductor, reliability assurance)
- "Techniques of Dealing with Hybrids and their Failure Mechanisms" - - Dave Guidici (Fairchild, process development); Bob Wallace (Fairchild, reliability and quality assurance)
- "Destructive Physical Analysis as Tool" - - Esther Williams (Lockheed reliability and safety)
- "LSI Failure Diagnosis with a SEM" - Gary Gear (Intel, new process technology)
- "Surface Characterization by Auger Electron Emission" - - Dr. Simon Thomas (Motorola semiconductor analytical lab)

A wrap-up session will follow the talks.

To reach the lecture hall, go west on Palm Drive (University Avenue extended) from El Camino Real, park on the oval, and follow signs to the meeting.

To preregister, mail the coupon below with your check, made out to IEEE, to the IEEE office (address on Page 2) by November 10. Registration at the door will cost you an extra \$3. The registration fee includes lunch at the Stanford Faculty Club.

Print Name _____

Address _____

Affiliation _____

Fee: Non-member \$8 ()

Student or unemployed \$7 ()

IEEE Member No. _____ \$5 ()

Solar Energy: National Plans, Local Projects

The Power Engineering Society's November 11 meeting will feature a presentation on the recent developments in the United States Energy Research and Development Administration's (ERDA) Solar Energy Program. ERDA Solar Energy Program covers several technology areas including heating and cooling of buildings, solar photovoltaic conversion systems, solar thermal electric conversion, ocean thermal energy conversion, wind energy conversion and fuels from biomass.

The presentation will be made by Robert M. Little, Acting Deputy Director, Space and Energy Program Office, San Francisco Operations Office, ERDA. Little has received an M.S. and Ph.D. in Applied Mechanics from the University of Virginia. Before formation of ERDA, he was with Atomic Energy Commission.

Little will discuss ERDA plans for implementing its programs in terms of research and development, demonstration and technology utilization. In addition, he will provide a description of some of the solar energy projects, including test facilities and central receiver power plants, being sponsored by ERDA in California and other parts of the western United States.

The American Society of Mechanical Engineers is sponsoring this meeting jointly with PES. Dinner and meeting are to be in the PG&E Building in San Francisco.

SF

Electric Club To Hear Talk on Safety of Nuclear Power Plants

At a noon meeting Tuesday, November 17, at the Sheraton Palace Hotel, Dr. Edward L. Draper, Jr., will speak on the role and safety of nuclear power plants. He is director of the Nuclear Reactor Laboratory and Associate Professor of Physics, University of Texas, Austin.

Draper is already known in the Bay Area. He spoke at a special session of the IEEE Summer Power Meeting on July 22 and appeared on a KPIX television panel on July 30. For further information, call (415) 445-2246.

'76 Conference Theme To Be "Energy For The Future"

The Tucson and Fort Huachuca IEEE Sections are to be co-hosts of the 1976 Region 6 Conference, April 7-9. The Phoenix Chapter of the Power Engineering Society will cooperate with them.

Theme of the conference is timely and development of an outstanding technical program is under way. Regionally and nationally known specialists in the areas of electronics, power conversion, and energy sources will speak and will also participate in panel discussions and the conference luncheon and evening banquet.

Participants in the conference will have the opportunity to tour facilities in the Tucson - Fort Huachuca area. These include Burr Brown, Fort Huachuca Army Electronics Proving Ground, Hughes Aircraft Company, Kitt Peak National Observatory, and Tucson Gas and Electric Company.

Headquarters for the conference will be the new Braniff Place Hotel in downtown Tucson. La Placita Village, adjacent to the hotel, offers about 80 highly unusual galleries and shops. Special activities are planned for spouses of Conference participants, and the Tucson area offers many unique attractions for engineer and non-engineer alike.

Following is the schedule of Conference fees:

	Pre-Registration	At Conference
IEEE Member*	\$30	\$40
Non-Member*	40	50
Student	5	10

*Fee includes a copy of the Conference Record.



IAS MEET ON HOSPITAL POWER SYSTEMS

At their dinner meeting at Caesar's Restaurant, San Francisco, November 18, the Industry Applications Society will discuss hospital power systems and backup supplies. Virgil Hammock (Simonson and Simonson Engineers) is to be the principal speaker.

Carrier and Clock Synchronization for TDMA Digicom

Data bursts typical of TDMA communication systems place severe requirements on rapid acquisition of carrier and clock synchronization. Circuits typically used in continuous communication systems (i.e., phase-locked loops) usually are unsuitable. To be practical, a circuit must combine rapid acquisition with minimum additional degradation due to noise.

At the Communications Society meeting November 11, Dr. Floyd Gardner will report on a detailed study of the problem. He will describe approaches to the problem and the performance to be expected.

An independent consultant for more than 15 years in communication and electronics, Gardner is the author of the book *Phaselock Techniques*. He developed the material for this presentation as a consultant to the European Space Agency in preparation for a European Communication Satellite.

EMB

Impact of Clinical Engineering in the Hospital

At a joint meeting of the groups of the San Francisco and Santa Clara Valley Sections November 13, two clinical engineers will discuss work of their departments in hospitals in the Sacramento area. Dinner and meeting will be at the PG&E Building in San Francisco.

After receiving his Ph.D. in bioengineering from the University of Wyoming in 1971, Bruce Barkalow organized the Clinical Engineering Department in Sutter Memorial Hospital; it now has a staff of 15. He now chairs the GEMB Certification Committee.

Having established a Clinical Engineering Department in San Francisco General Hospital, Willard D. McKinney became Director of the Clinical Engineering Department in the Sacramento Medical Center, University of California, Davis. A Certified Clinical Engineer, he is a member of the Board of Examiners for Clinical Engineering Certification and Co-Chairman of the Education Committee on AAMI.

Both Barkalow and McKinney are active in the program for certification of practitioners in clinical engineering. In their presentation, they will discuss this subject.

ONE-DAY SHORT COURSE ON NEW IEEE INTERFACE BUS: On Friday, November 14, from 8:30 AM to 4:30 PM at SLAC Auditorium on Sand Hill Road, Menlo Park: "Simplified Automated Test and Measurement Systems Via the New IEEE Standard Digital Interface": Pre-registration costs \$45 (members); \$55 (non-members); \$25 (student members). See this issue for details or call Jean Helmke at the Council office (415) 327-6622.

NUCLEAR POWER SYMPOSIUM, NOV. 19-21. Jointly sponsored by PES, Nuclear Plsama Sciences and ERDA. For engineers interested in the control instrumentation and electrical systems of nuclear power generating plants. Sessions on standards, plant experience, NRC regulatory guides and environment. Program and information contact: John F. Osborn, 175 Curtner Avenue, MC 665, San Jose, CA 95125; (408) 297-3000, Ext. 2374.

The ILLIAC IV and Other Strange Architecture

At the Computer Society meeting November 19, William Jones and Kenneth Stevens will discuss advantages of advanced computer architectures for fluid and plasma simulations. These advantages, embodied in ILLIAC IV, STAR, ASC, and Cray I, grow in significance with the skill of the user.

Small pieces of sequential code may degrade overall performance. They, nevertheless, offer large cost savings relative to the fastest sequential machines.

In particular, wind-tunnel experimentation is beset by rapidly increasing costs. Special-purpose machines may moderate these costs. New vector language developments, based on a careful analysis of problem classes, offer an alternative to high software development costs.

Jones has completed all course work for a Ph.D. at Stanford and has worked at Ames since 1958, currently in adapting scientific and engineering problems to parallel processing. At Ames since 1970, Stevens has been developing systems-level software for the ILLIAC IV.

ASSP, EMC

Opto-Isolators as Line Receivers in High-Speed Digicom

Gary Labelle and Hans Sorensen will highlight the types of opto-isolators now available for use commercially and in military environments. Theirs will be the featured presentation at a joint ASSP-EMC dinner meeting Wednesday, November 19, at the Swiss Chalet in Palo Alto.

The presentation will cover use of opto-isolators as line receivers in high-speed (up to 15 million bits) digital communication systems, with both active and passive termination conditions, using shielded-cable configurations. It will also cover the following characteristics of opto-isolators:

- Common-mode rejection up to 2500 volts for 60-Hz transients (the limit is normally 15 volts for standard TTL circuits);
- Isolation and elimination of groundloop current problems;
- Noise immunity in line receivers;

NOVEMBER 1975



Richard Sherman

AES

Noise Effect in Coherent Digital FSK

The AES meeting November 20 will feature a discussion of the effects of thermal noise and oscillator noise on the error rate performance of coherent binary and quaternary FSK communication. The discussion will put particular emphasis on degradation due to a noisy reconstructed carrier reference.

The featured speaker, Dr. Richard Sherman, is a senior engineering specialist in the Communication Sciences Department of Aeronutronic-Ford's WDL division in Palo Alto.

- Digital programming in floating paper supplies.
- Literature on opto-isolator applications will be available.

Now in HP's Optoelectronics Department, Labelle is involved in opto-isolator marketing design and applications. Earlier, he was in the company's Semiconductor Division. His prior experience was in hybrid IC circuit design at Teledyne.

An employee of Hewlett-Packard for 17 years, Sorensen is now involved in design of opto-isolators and in other optoelectronics applications.

See CALENDAR for Program Arrangements

Why Your Computers Have Requirements for Cryptography

Title of this presentation November 20 is to be "Cryptographic Requirements in the Computer Environment". The presentation will cover the following topics:

- Cryptographic requirements in computer systems from the points of view of information theory and computational complexity.
- The complexity of enciphering and deciphering of cryptographic systems.
- Several problems of interest in cryptography and related areas.

Whitfield Diffie is to give the presentation, which is based on work done jointly by him and Dr. Martin Hellman.

Now a graduate student and formerly a senior programmer at Stanford, Diffie also serves as a consultant to the Binary Corporation. Hellman is an Associate Professor at Stanford and Vice President of Binary.

The presentation at SRI will follow a Information Theory Society dinner at a Menlo Park restaurant.

AP

Scale Modeling of Interaction of Systems with Transient Signals

As the presentation at the AP meeting November 13 will discuss, many kinds of signals interact with systems to cause error and malfunction. But, currently, the electromagnetic pulse associated with a nuclear event is getting special attention: it can couple energy simultaneously into many widely distributed systems.

Analysis may often be too time-consuming or complex to be feasible. Then scale modeling provides a way of estimated how energy in such an event is distributed in complex systems. It can also be useful in preparing plans for simulation tests, including excitation of the system under test.

John B. Chown will make the presentation, including several examples of the application of modeling to actual systems. Holding a B.E. from USC, Chown previously worked with Lockheed Aircraft in Burbank. He currently serves as Assistant Director of the Electromagnetic Sciences Laboratory at SRI.

GRID 11

**AEROSPACE &
ELECTRONIC
SYSTEMS
NOV. 20**

NOV. 20, Thursday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. No host cocktails 6:30 PM; Dinner 7:00 PM. Reservations: J.R. Welch (415) 494-7400, Ext. 5231.

**CIRCUITS & SYSTEMS
NOV. 11**

NOV. 11, Tuesday, 7:00 PM, Lockheed Auditorium, Bldg. 202 lobby, 3251 Hanover St., Palo Alto. (Across the street from Hewlett-Packard.)

**COMMUNICATIONS
NOV. 11**

NOV. 11, Tuesday, 8:00 PM, GTE Lenkurt Auditorium, San Carlos - Industrial Way Entrance (1100 block). For information call J.H. Bistrop (415) 592-4120, Ext. 178.

**COMPUTER
NOV. 19**

NOV. 19, Wednesday, 8:00 PM, University of Santa Clara, Science Hall, Room 207. Dinner 6:15 PM, Mariani's 2500 El Camino Real, Santa Clara; \$5.50 per person. Reservations: Council office (415) 327-6622.

**CONTROL SYSTEMS/
SYSTEMS SEMINAR
DEC. 1**

DEC. 1, Monday, 4:15 PM, Shilling 191, Stanford University. No dinner. For information call (415) 497-3798 - Martin Morf.

**ELECTROMAGNETIC
COMPATIBILITY/
ACOUSTICS, SPEECH &
SIGNAL PROCESSING
NOV. 19**

NOV. 19, Wednesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails 6:00 PM; Dinner 6:45 PM. Reservations: Council office (415) 327-6622.

**ELECTRON DEVICES/
RELIABILITY/PARTS,
HYDRIDS &
PACKAGING
NOV. 15**

NOV. 15, Saturday, 9 AM to 4:30 PM, Physics Lecture Hall, PH 100, Stanford University. Pre-registration fee \$7.00 includes lunch at Stanford Faculty Club. Mail check to IEEE Office, 701 Welch Road, Suite 2210, Palo Alto, CA 94304 by November 10. An additional \$3 will be charged for registration at the door.

**ENGINEERING IN
MEDICINE & BIOLOGY/
SAN FRANCISCO
SECTION
NOV. 13**

NOV. 13, Thursday, 7:00 PM, PG&E, 77 Beale St., Room 301-303. Dinner 6:00 PM, same place. Reservations: Art Wells (415) 467-1800 by November 11. (Cost: \$2.00 - \$3.00 for dinner.)

**NOISE EFFECTS ON CO-
HERENT DIGITAL PSK. Dr.
Richard Sherman, Sr. Eng.
Specialist, Aeronutronic - Ford
WDL**
ORGANIZATIONAL MEETING.
**CARRIER AND CLOCK SYN-
CHRONIZATION FOR TDMA
DIGITAL COMMUNICATIONS.
Dr. Floyd M. Gardner, Gardner
Research Co.**
**PERFORMANCE OF ILLIAC IV
AND OTHER STRANGE ARCHI-
TECTURES. William Jones and
Kenneth Stevesn, NASA/Ames
Research Ctr.**
**JOINT MEETING: SYSTEMS
SEMINAR IN EE DEPT., STAN-
FORD UNIVERSITY. Speaker
will be Bryan D. Anderson from
the University of New Castle in
Australia. Subject to be
announced.**
**JOINT MEETING: ADVAN-
TAGES OF OPTO-ISOLATORS
AS LINE RECEIVERS IN HIGH
SPEED DIGITAL COMMUNICA-
TION SYSTEMS. Gary Labelle
and Hans Sorensen, Optoelec-
tronics Div., Hewlett-Packard,
Palo Alto.**
**JOINT MEETING: FAILURE
MECHANISMS AND FAILURE
ANALYSIS TECHNIQUES. A
one-day TUTORIAL. See notices
in this GRID for speakers, pre-
registration form and information.**
**JOINT MEETING: THE IMPACT
OF CLINICAL ENGINEERING
IN THE HOSPITAL. Dr. Bruce
Barkalow, Sutter Memorial
Hosp., and Willard D. McKinney,
Sacramento Medical Ctr.**
**INDUSTRY
APPLICATIONS
NOV. 18**

NOV. 18, Tuesday, 7:30 PM, Caesars Restaurant, Bay & Powell, San Francisco. Dinner at 6:30 PM. Cost \$7.00. Reservations: Bill Konoetz (415) 768-2320 or Bert Bergstrom (415) 431-7701 by November 14.

**INFORMATION
THEORY
NOV. 20**

NOV. 20, Thursday, 8:30 PM, SRI, Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner at 6:15 PM, Golden Acorn, 1120 rane, Menlo Park. Reservations: Mrs. Marilyn Pullen, (415) 326-6200, Ext. 3881 BEFORE November 20. Cost: \$5 - \$7.

**MICROWAVE THEORY
AND TECHNIQUES
NOV. 20**
**OAKLAND-EAST BAY
SECTION
NOV. 18**

NOV. 18, Tuesday, 7:30 PM, Bellini's Italian Restaurant, 4130 Telegraph Ave., Oakland. Reservations required for dinner and/or meeting; call Terry Rossow (415) 447-1100, Ext. 3650 by November 14.

**POWER ENGINEERING/
AMERICAN SOCIETY
OF MECHANICAL
ENGINEERS
NOV. 11**

NOV. 11, Tuesday, 7:00 PM, PG&E, 77 Beale St., SF. Social Hour 5:30 to 6:00 PM; Dinner at 6:00 PM. Reservations: Carol Franke (415) 781-4211, Ext. 1442. Dinner Cost: \$5.00.

**VEHICULAR
TECHNOLOGY
NOV. 17**

NOV. 17, Monday, 8:00 PM, International Inn, Bayshore Freeway at Airport Blvd., South SF. Cocktails 6:30 PM; Dinner 7:00 PM. For more information contact Phil Kane (415) 556-7700 or Ray Griese (408) 248-5199. Visitors welcome.

**PROFESSIONAL
ACTIVITIES
COMMITTEE, SCV
SECTION
NOV. 17**

NOV. 17, Monday, 7:30 PM, Hewlett-Packard, Bldg., 5, 1501 Page Mill Road, Palo Alto. No dinner.

**PROFESSIONAL
ACTIVITIES
COMMITTEE, SCV
SECTION
DEC. 4**

DEC. 4, Thursday, 7:30 PM, FMC Corp., 1105 Colman Ave., San Jose - just off Highway 17, opposite entrance to San Jose Airport.

**HOSPITAL POWER SYSTEMS.
Virgil Hammock, Simonson &
Simonson Engineers.**
**CRYPTOGRAPHIC REQUIRE-
MENTS IN THE COMPUTER
ENVIRONMENT. Whitfield Diffie
and Prof. Martin Hellman, Stan-
ford University.**
**MIC POLAR, LINE AND FM
DISCRIMINATORS FOR MIC-
ROWAVE AND MILLIMETER
APPLICATIONS. Ash. K.
Gorwara, Stanford Research
Institute.**
**MICROPROCESSORS - APPLI-
CATIONS AND INTERFACING.
Thampy Thomas, Intersil, Inc.,
Cupertino.**
**JOINT MEETING: SOLAR EN-
ERGY DEVELOPMENT - NA-
TIONAL PLANS AND LOCAL
PROJECTS. Dr. Robert M. Little,
Acting Deputy Director, ERDA.**

Dane E. Ericksen, Supervising Engineer, Western FM/TV Enforcement Unit, FCC, will demonstrate and explain the unique state of the art mobile signal analysis unit for the measurements on FM, TV and Cable systems.

General meeting of the Santa Clara Valley Section PAC. Discussion of patent agreements and employment contracts, etc.

**PANEL DISCUSSION: REPORT
ON PROFESSIONAL ACTIVI-
TIES. Moderator is Jack
Nawrocki, Aeronutronic-Ford.**