



THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

RockIEEE Overlook

DENVER SECTION

FEBRUARY 1988

Joint Boulder-Denver APS/MTTS/GRS -
Antennas and Propagation, Microwave
Theory and Techniques, and Geoscience
and Remote Sensing

Date: Thursday, February 11, 1988
Place: National Bureau of Standards, 325
Broadway, Boulder, CO, Room 1107
Time: 4:00 pm - 5:00 pm
Speaker: Walter D. Burnside, Electrosience
Laboratory, Department of Electrical
Engineering, Ohio State University,
Columbus, Ohio.
Topic: "Compact Ranges and RCS Measurement
Techniques"

The compact range has been used for electromagnetic measurements since the early 1950's. Although the early attempts with such systems had some successes, they were not generally used until the middle 1970's. This interest was sparked by a commercially available system developed by Scientific-Atlanta. Based on the recent interest in radar cross section, the compact range has been re-examined in terms of its capabilities for measuring the scattering properties of large structures. As a result, new systems have been designed using various electromagnetic analyses to guide this research effort. These changes include the reflector, feeds, target mount, instrumentation, absorber, target handling techniques, data processing, calibration methods, calibration targets, etc. The presentation will cover the latest and more interesting aspects of this challenging new area.

Contact: Hussain Haddad, 460-2114

PES/IAS - Power Engineering Society/
Industry Applications Society

Date: Thursday, February 18, 1988
Place: Brooklyn's, 2644 W. Colfax Ave.
(South of McNichols Arena)
Time: 6:00 pm Social
7:00 pm Dinner (Optional @ \$15.00)
8:00 pm Program Begins
Speaker: Ernie Poggi, Sr. Engineer, Tri-State
Generation & Transmission Assoc.
Topic: "A Unique Approach to Transformer
Differential Protection"
Tri-State Generation & Transmission
Assoc. recently implemented a differential protection scheme on 230/138 KV single phase autotransformers at the Gore Pass substation utilizing high-impedance relays to gain sensitivity and avoid switching CT circuit when using the spare transformer.
Contact: Barbara, Peterson Company, 388-6322
by February 15, 1988.

CS/ITS - Computer Society/Information Theory
Society

Date: Thursday, February 18, 1988
Place: Cadnetics, 5775 Flatirons Parkway,
Boulder CO
Time: 7:00 - 9:00 pm
Speaker: Doug Freeze of Cadnetics
Topic: Presentation and demonstration of
electronic system and design using
Cadnetics CAD system.
Contact: Sandy Bish, 538-8157, by February 16.
Reservations are required.

Pre-announcement for March meeting

Date: Thursday, March 17, 1988, 7:00 pm
Speaker: Dr. Vincent Jones
Topic: Dr. Jones will speak on his new book,
MAP/TOP Networking: A Foundation for
Computer - Integrated Manufacturing
Contact: For info. call Sandy Bish at 538-8157

Please cancel your meeting reservations if you are unable to attend. No-shows will be responsible for the cost (if any) of dinner.

Chairman's Message
by Mike Foley

The January 6th Section meeting was an opportunity to recognize and present awards to the outgoing 1987 Officers and those individuals who served the Section on the Executive Committee.

Mike Niehoff, outgoing Chairman presented the awards to his outgoing committee. On behalf of the Section, a big "Thank You" to Mike and his committee for a job well done.

The Section program for the meeting was presented by Dr. John Akey, Director of the Space Resource Center for the U.S. Space Foundation based in Colorado Springs.

Dr. Akey organizes and manages the resource center including cataloging and distribution of NASA/FAA space education materials, as well as developing educational programs to integrate space education into the classroom through the popular and successful workshops, "Getting Comfortable Teaching with Space".

Akey is a 20-year teaching veteran of Colorado Springs School District 11. He is a graduate of Colorado State University, holds a master's degree in chemistry from Oklahoma State University and a doctorate in education from the University of Northern Colorado in Greeley.

Most recently, Dr. Akey completed two years service to the Colorado Commissioner of Education as Science Consultant, advising school districts throughout Colorado on science curriculum development.

"Building a national program showing kids of today the excitement that awaits them tomorrow in the future high tech world is of paramount importance -- the programs we foster now will help determine the future of our national space program and an overall awareness of space by members of our society," Dr. Akey said

Upcoming events of interest to Section members are:

Section Committee Meeting - Wednesday, February 3rd. Call me for details.

Engineer's Week - Feb. 22nd thru 26th
Legislative Breakfast - Wednesday, Feb. 24th, 7:30 - 9:00 am. Come meet with your state representatives and discuss issues of importance to you and your colleagues.

Colorado Engineers Dinner - Friday, Feb. 26th. Celebrate Engineer's Week, renew friendships with fellow professionals and hear an excellent speaker.

CEECON (Colorado Electrical and Electronics Convention). Monday and Tuesday, March 21st and 22nd, Colorado Springs. Watch for details in mailings and next months Overlook.

March Section Meeting - Wednesday, March 16th, Financial Planning. It's not too late! Come hear some tips.

Joint Denver Section/All Chapters Meeting Wednesday, April 13th. Attend the 3rd Annual meeting. A special Section program is being planned and chapter programs will be of special technical interest to you.

Annual Awards Banquet - May (date and location to be announced) This annual meeting is the opportunity to recognize the outstanding Chapter activities and to present awards to those individuals who make special contributions to our Section and the IEEE.

As you see, there are many activities planned over the next few months. Mark your calendar for those activities of interest to you. Your support of the Section activities is important! Don't sit on the sidelines - participate.

Dear Colleague by Bill Whipkey

Dear Colleague,
Why does IEEE engage in non-technical activities and who pays for them?
J.S., Arvada CO

Dear J.S.,
When IEEE was founded in 1963 with the merger of The American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE), the new constitution stated IEEE's purposes were scientific and educational. During much of the history of IEEE's preceding organizations, members had urged that the programs be broadened to help enhance the standing of their members over and above the acknowledged reputation conferred by technical activities. With the onset in the late 1960's of heavy unemployment among members working in the space and defense

Eighth Annual COLORADO ENGINEER'S DINNER



Program: US & USSR Private Nuclear Test Ban Verification — A Reality
Speaker: Dr. Charles Archambeau, Chairman, NRDC Seismic Monitoring Advisory Committee
Location: The HYATT REGENCY HOTEL, Imperial Ballroom, 1750 Welton St., Denver
Date & Time: Friday, February 26, 1988

Cocktails & Music 6:00 p.m.
Dinner 7:30 p.m.
Program 8:30 p.m.
Music & Dancing 9:30 p.m.
PRE-PAID RESERVATIONS \$25.00 per person
Prompt Reservations Recommended — Reservations Limited

NATIONAL ENGINEER'S WEEK: February 21-27, 1988
"Engineers: Construction ... not Destruction"

Come join us for a delightful evening. Celebrate Engineer's Week, enjoy a fine social evening, renew friendships with fellow professionals, and hear an excellent speaker.
For additional information, telephone Warren Andrews at 279-1277.

Eighth Annual COLORADO ENGINEER'S DINNER
Friday, February 26, 1988

Please reserve _____ tickets at \$25.00 each for the Colorado Engineer's Dinner.
Enclosed is my check for \$ _____, made payable to the COLORADO ENGINEER'S DINNER.

NAME: _____

ADDRESS: _____

TELEPHONE: (office) _____ (home) _____

Please return this form by
February 12, 1988, to:
Warren Andrews
1942 Mt. Zion Dr.
Golden, CO 80401

Your tickets will be mailed to you in advance of the dinner.

DEADLINE EXTENDED TO FEBRUARY 26, 1988



CALL FOR PAPERS

Sponsored by IEEE Regions 5 & 4, Dallas and Chicago IEEE Sections, Southwest and Chicago ERA Chapters and Central U.S. ERA Council

**MIDCON/88 TECHNICAL CONFERENCE
ON ELECTRONIC and ELECTRICAL TECHNOLOGY**

**Aug. 30 - Sept. 1, 1988
Dallas, Texas**

SCOPE — All aspects of electronic and electrical technology concerning processes, devices, components and systems:

- New concepts and breakthroughs
- New materials and new fabrication technologies
- Simulations, modeling, design, and testing
- Quality and Reliability
- Packaging
- All aspects of manufacturing and fundamentals related to the above subjects.

GOAL — To foster communication between designers, manufacturers, and users of electronic and electrical technology.

SUBMISSION OF PAPERS

Papers describing original work, tutorials, or reviews are solicited for a 25 minute presentation and printing in the Conference Digest for the following suggested topics:

- | | | |
|---|---|---|
| <ul style="list-style-type: none">• Implications of High Temperature Superconductivity on IC Designs• Cryogenic Systems For Superconductivity Applications• Implications of High Temperature Superconductivity on Power• Supercollider• Silicon Sensors• Computer Power Protection• Industrial Plant Lighting• Lightwave Communications• Local Area/Local Loop Networks• Sensors | <ul style="list-style-type: none">• Acoustical Neurocomputing• Optical Neural Networks• Image Processing• Signal Processing Algorithms• Artificial Intelligence• Parallel Processing• Object Oriented Systems• Services, Issues, and Technology in the Realization of Integrated Services Digital Network (ISDN)• Common Channel Signaling (SS7)• Satellite Global Positioning | <ul style="list-style-type: none">• Gigabit Signal Processing• Radar Cross Section Measurement and Analysis• Interferometers• Microwave Computer Aided Design• Nonlinear Device Modeling• Vision Systems In Inspection• CAD/CAM• Robotics• High Power Lasers• Optical SDI Applications• Medical Monitoring Technology |
|---|---|---|

Reliability or Quality papers concerning the suggested topics are encouraged.

Technical session proposals will also be considered.

DEADLINE FOR RECEIPT OF PAPER SUMMARY IS JANUARY 25, 1988 — APPROPRIATE COMPANY AND GOVERNMENT CLEARANCES MUST BE OBTAINED PRIOR TO THIS DATE FOR BOTH SUMMARY AND PAPER.

Authors are asked to submit two copies of a one page summary (single sided; 500 words maximum) which clearly describes the work, and at most two additional pages of figures, drawings, and references.

Authors of accepted papers will receive an author's kit with instructions for the preparation of the camera-ready copy (four pages maximum) of the paper to be published in the Midcon/88 Conference Digest. The camera-ready copy will be due May 27, 1988.

FOR FURTHER INFORMATION AND A COPY OF THE CALL FOR PAPERS CONTACT:

Midcon/88 Technical Conference Committee
c/o Electronic Conventions Management
Educational Activities Department
8110 Airport Boulevard
Los Angeles, CA 90045
213/772-2965
Outside California 800/421-6816
Inside California 800/262-4208



(303) 288-0751
TELEX # 857544 (EPECO DVR)
FAX # (303) 288-5003

ELECTRIC POWER EQUIPMENT COMPANY

SPECIALIZED ELECTRICAL CONTROLS FOR INDUSTRY

5151 E. 56TH AVENUE
COMMERCE CITY, CO 80022

FORENSIC ENGINEERING INC.

PROUDLY ANNOUNCES THE
OPENING OF ITS

DENVER OFFICE

AND IS PLEASED TO
WELCOME TO THE FIRM

MICHAEL J. FOLEY
ELECTRICAL ENGINEER

MR. FOLEY WILL CONCENTRATE IN THE ANALYSIS OF ELECTRICAL
AND ELECTRONIC FAILURES, PRODUCT LIABILITY, CODE INTERPRETATION,
SAFETY PRACTICES AND UTILITY DESIGN.



3535-G SOUTH PLATTE RIVER DRIVE
ENGLEWOOD, COLORADO 80110
303 789-0078

ATLANTA • DENVER

sectors, attention was focused on the need for IEEE to assume an expanded role in helping its members. New social pressures resulting from technological advances were raising concerns about the quality of life for all Americans. The purposes of a society such as IEEE, which often were inward looking, had to be expanded to reflect its outward responsibilities toward the general society in which it practiced.

In 1971 the IEEE Board submitted an amendment which added to Section 2. Its purposes are (a) Scientific and Educational..., (b) professional, directed towards the advancement of the standing of the members of the profession it serves... IEEE shall strive to enhance the quality of life for all people throughout the world through the constructive application of technology in its fields of competence. It shall endeavor to promote understanding of the influence of such technology on the public welfare.

EIT POWER — TEST
Electrical Information & Testing

P.O. Box 910
Westminster, CO 80030

Keith N. Henderson (303) 428-1655

POSITIONS AVAILABLE:

RF MICROWAVE design engineer - 2-3 years experience in hybrids, MIC's.

THIN FILM PROCESS manager - degree preferred. 6-10 years experience.

For more information call Nancy Benamati at (303) 671-5344 or send confidential resume to P.O. Box 22125, Denver CO 80222

This amendment was approved in November 1972 by 86.6% of the members voting. IEEE created the United States Activities Committee in 1973 and levied a special \$5.00 assessment on members of Regions 1 through 6 (U.S. only) to pay the cost. In 1974 USAC was elevated to board status because of the wealth of programs and its need for a broader structure. In 1971, the IEEE Board of Directors authorized establishing an Institute office in Washington DC, with just two people. This office would facilitate the exchange of information between IEEE members and the Congress and Executive agencies. Today USAB is a major IEEE activity supported by the Washington office which has grown to a staff of more than 20 individuals housed in a modern automated facility. USAB now has five councils with more than 50 committees and hundreds of member volunteers like myself with a budget of more than two million dollars. The U.S. Regional assessment is currently \$13.00 plus \$2.00 for ABET and AAES membership paid by all U.S. IEEE members.

A new brochure entitled "IEEE U.S. Professional Activities" is available upon request as well as a copy of the IEEE constitution. Send your request and/or questions about IEEE and PACE to: Dear Colleague, Attn: Bill Whipkey, 8069 Meade St., Westminster CO 80030.

THE INSTITUTE of ELECTRICAL and ELECTRONICS ENGINEERS - DENVER SECTION

EXECUTIVE COMMITTEE

CHAIRMAN

Michael J. Foley
Forensic Engineering, Inc.
3535 South Platte River Dr.
Suite 100G
Englewood, CO 80110
789-0078

SENIOR VICE CHAIRMAN

Keith Henderson
EIT Power Test
P.O. Box 910
Westminster, CO 80030
428-1655

VICE CHAIRMAN Members Services

Gary A. Petersen
United Engineers & Constructors Inc.
Stearns-Roger Division
700 S. Ash St., P.O. Box 5888
Denver, CO 80217
692-2680

VICE CHAIRMAN -

Student Activities
Dr. Gordon K. F. Lee
Dept. of Electrical Engineering
Colorado State University
Fort Collins, CO 80523
491-5767

SECRETARY

John R. Reesy
Public Service of CO
2420 W. 26th Ave.
Suite D
Denver, CO 80211
480-6940

TREASURER

Henry Rackley
Ball Aerospace
2864 S. Joplin
Aurora, CO 80013
690-1600

SOCIETY CHAPTER CHAIRMEN

Engineering in Medicine and Biology - **Darrell Jones**, University of Colorado Health Sciences Center, 394-8552
Aerospace and Electronics - **Henry Rackley**, Ball Aerospace, 690-1600
Reliability - **Dale Butler**, Martin Marietta Aerospace, 977-9054
Electro-magnetic Compatibility - **Andy Anderson**, Martin Marietta Aerospace, 971-6422
Power Engineering - **Kenneth McBryde**, Colorado Ute Electric Association, 1-249-4501
Joint Antenna and Propagation/Microwave Theory and Techniques/Geoscience and Remote Sensing - **Hussain Haddad**, Ball Aerospace Systems Division, 460-2114
Joint Communications/Vehicular Technology - **John Hardzinski**, Martin Marietta Information and Communications Systems, 977-2972
Joint Computer/Information Theory - **Sandy Blish**, AT&T Information Systems, 538-4717
Joint Electro-magnetic Compatibility/Instrumentation Measurement - **Richard Groves**, Colorado School of Mines, 273-3677
Joint Power Engineering/Industry Applications - **Jeff Selman**, Tri-State Generation and Transmissions, 452-6111
Start-up Chapter, Laser & Electro Optics Society - **Arun K. Majumdar**, University of Colorado Denver, 556-2554

SUBSECTION CHAIRMEN

Black Hills - (Acting Chairman) **Dr. Larry Simonson**, Electrical Engineering Dept. South Dakota School of Mines & Technology, Rapid City, SD 57701, (605) 394-2459
Centennial - **Louis Thomas "Tom" Mills**, Hewlett-Packard Co., Fort Collins, CO 80525, 1-229-3737

COMMITTEE CHAIRMEN

Society Chapters - **H. Paul Melsel**, Microsemi Corporation Colorado, 469-2161
Student Branch Activities - **Charles Wright**, Public Service Company of Colorado (retired), 233-5553
Professional Activities - **Dan Michaels**, 939-5139
Conferences - **John Tary**, Tri-State Generation and Transmission Association, 452-6111
Professional/Industrial Liason - **John Martin**, Public Service Company of Colorado (retired), 233-0023
Awards - **Michael E. Niehoff**, Public Service Company of Colorado, 480-6955
Nominations - **William B. Whipkey**, 427-2411
Student Fund - **Dan Michaels**, 939-5139
Membership - **Herb Bass**, 530-7509
Educational Activities - **Pankaj K. Sen**, EE & CS Dept., University of Colorado Denver, 556-2872 or 556-2852
Pre-College Student Activities - **Dan Michaels**, 939-5139

PAST CHAIRMAN

Michael E. Niehoff, 480-6955

SENIOR PAST CHAIRMAN

William B. Whipkey, 427-2411

RockIEEE Overlook

Gary A. Peterson - Editor
United Engineers & Constructors Inc.
Stearns-Roger Division
700 S. Ash St., P.O. Box 5888
Denver, CO 80217
692-2680

Anita Wanberg - Publication Coordinator

dba Trade Services
P.O. Box 4056
Englewood, CO 80155-4056
220-8042

THE INSTITUTE OF ELECTRICAL and ELECTRONICS ENGINEERS

DENVER SECTION



P.O. Box 4056
Englewood, CO 80155-4056
Phone: 220-8042

Non Profit Org.
U. S. Postage
PAID
Denver, CO
Permit No. 1993

THE MONTH AT A GLANCE

February 3
Section Committee Meeting

February 11
APS/MTTS/GRS Meeting

February 18
PES/IAS Meeting
CS/ITS Meeting

February 22-26
Engineers Week

TIME DATED MATERIAL

Published Monthly to inform members of local meetings, conferences
workshops and social, technical, educational and professional activities

RockIEEE Overlook

Official Publication of the
IEEE Denver Section