

RockIEEE Overlook

February 1991

Newsletter of



**The Institute of Electrical and Electronics Engineers
Denver Section**

Chairman's Message

by Gary Petersen

The next time you look into a mirror, will a "typical" IEEE member be looking back at you? Chances are, you have no idea what a typical IEEE member looks like, especially since there are no longer tell-tale slide rules hanging from our belts.

The IEEE United States Activities Board (USAB) completed a 1989 IEEE U.W. Membership Salary & Fringe Benefit Survey of random active higher-grade members. Based on this survey, USAB developed the following profile of a "typical" U.S. IEEE member.

The typical IEEE member is male, white, and employed full time working in private industry. He has been with his current employer five and a half years. His company employs more than 500 people. He worked for his former employer for two and a half years. He has 13 years' professional experience. He holds a BSEE and participates in employer-offered training. He has no certification. He is a U.S. citizen, 40 years old, with no physical or medical impairments. The funding for his employment is probably not dependent on the government. He holds a Member grade in the IEEE.

He is employed in his primary area of technical competence which is Power Engineering, Communications, or Computers. He holds an engineering responsibility level of 5 or 6. This is equivalent to a GS12 or 13 in government or an Associate or Full Professor in academia. He does not own all or part of his firm. He is not looking for a new job.

He has a mean salary of \$56,000. This amount has the same purchasing power as the \$19,200 earned by the typical IEEE member in 1971. He would earn more if he were a Registered Professional Engineer. He and his family enjoy an array of health benefits, including life insurance, disability coverage and dental care. Most likely he does not have eye care coverage. His retirement plan is of the defined-benefit type and there is a good chance he participates in a 401(k). His employer also is likely to sponsor a credit union. He hopes to retire with income equal to 60 percent of his current salary.

Compared to the typical IEEE member found in earlier surveys he is younger, but similar in most other respects. Looking back to 1971, his pay is keeping up with inflation; this was not true in every year since 1971.

If you would like more information on salaries and fringe benefits, you can order a copy of the complete survey from the IEEE Service Center.

Society Chapter Meetings and Information

Front Range Software Quality Committee

Friday, February 8, 1991

StorageTek
Louisville, Colorado
2:00 - 4:00 p.m.

Speakers

Harry Kohoutek
Manage, colorado Computer Quality Department
Hewlett Packard, Fort Collins

"Report on 2nd International Study Mission to Japan on S/W Quality Management"

Please call Rick Karcich, 673-6223 for information.

Joint AP/MTT/GRS

Antennas and Propagation, Microwave Theory and Techniques, Geoscience and Remote Sensing

Thursday, February 21, 1991

National Institute of Standards and Technology
325 Broadway, Boulder, Room 1103
4:00 - 5:00 p.m.

Speaker

James R. Wait, Consultant in
Electromagnetics and Electrical Geophysics
Tucson, Arizona

"Theory and Application of Transients in EM Methods of Geophysical Exploration"

This presentation will review the speaker's early efforts to understand the physics and chemistry of time-dependent fields in geological media.

Dr. James R. Wait is a fellow of the IEEE and has been appointed to the AP-S Distinguished Lecturer Program for the 1990-91 year.

No reservations are required. Please call Katie MacReynolds at 497-3471 for information.

Joint PES/IAS Power Engineering/Industry Applications

Wednesday, February 20, 1991
Brooklyn's Saloon and Restaurant, 572-3999
2644 W. Colfax, Denver (under the viaduct)

6:00 p.m. Social
7:00 p.m. Dinner (optional @ \$10)
8:00 p.m. Meeting

Speakers

Duane Torgerson
Electrical Engineer
Substation Design Division
Western Area Power Administration

"Virginia Smith Back-to-Back DC Converter Station"

The back-to-back high voltage direct current (HVDC) facilities located in Sidney, Nebraska were dedicated on August 28, 1990 as the Virginia Smith Converter Station (SCS) in honor of Congresswoman Virginia Smith of Nebraska. Commissioned and in operation since 1988, the SCS provides an electrical link between the eastern and western power grids at Sidney, Nebraska. The east and west alternating current (ac) networks that connect to the SCS are comprised of large generation and transmission systems operated asynchronously. Although the ac systems are large both electrically and geographically, the relative weakness of both ac networks at Sidney, Nebraska required the use of special equipment and control features to allow a successful interconnection. Additionally, the SCS is operated as an unattended facility with control via a microwave communication link from a dispatch center located approximately 150 miles away in Loveland, Colorado.

The presentation will review several of the key design criteria that establish operating boundaries for the facilities, a description of the major equipment items, and a summary of the operational experiences during the past three years.

Please contact Barbara at Peterson Company, 388-6322, by Monday, February 18, 1990.

Power Electronics Chapter

Thursday, February 21, 1991

Please call Clyde Manning, 682-6492, for the room number and other information.

EMC

Electromagnetic Compatibility Society

February 19, 1991

National Institute of Standards and Technology
325 Broadway, Boulder, Room 1103
7:00 p.m.

Speaker

Bud Taggart
President, Taggart Enterprises

"EMC Metrology in the USSR"

Everyone is welcome. For more information call Mark Lapchak, 773-4626 or Ev Evans 761-9447 for more information.

Joint CS/IT

Computer Society/Information Theory Society

Thursday, February 21, 1991

Solbourne Computer, Inc.
1900 Pike Road
Longmont, Colorado
7:00 - 9:00 p.m.

(Meet at main lobby. From Boulder, take Hwy. 119 to Hover Rd. in Longmont, go south to Pike Rd., east to Solbourne facility. From Denver, take I-25 to exit 235 (Hwy. 52), go west to Hwy. 287, north to Pike Rd., west to Solbourne facility.)

Speaker/Tour Hosts

Dave Barach, Shah Bhatti, Allan Snell,
John Salmi, Pete Ostidiek
Solbourne Computer, Inc.

"Symmetric Multi-Processing"

Dave Barach, chief architect of Solbourne's Symmetric Multi-Processing (SMP) implementation, will address issues concerning symmetric multi-processing in general and the UNIX OS in particular. The discussion will be followed by a Solbourne product demonstration and tour of facilities.

Please call Rory Laiho at 924-7534 or Shah Bhatti at 678-4744 for reservations.

Magnetic Society

Thursday, February 7, 1991

Storage Technology Corporation
Louisville, Colorado
6:00 - 7:00 p.m.

Speaker

Dr. William B. Phillips
Vice President Information Storage Technology
Storage Technology Corporation
Louisville, Colorado

"DASD Technology Futures"

This talk will deal with the future of the disk drive technology.

All IEEE members and their guests are welcome.

Please call Dr. Subrata Dey, 673-6494 if you have any questions.



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Region 5 Conference

April 12-14, 1991

The 1991 Region 5 Conference will take place in Laramie, Wyoming in April 1991 under the direction of Sadrul Ula (307) 766-6268, Centennial Subsection Chairman.

Region 5 covers a 12 state area in the midwest and represents over 26,000 student and professional IEEE members. Over 40 student branches of IEEE will be represented from colleges and universities within Region 5.

Over 24 design contest teams will be participating in the Student Design Contest, and the top two winners in each of the Area paper contests will be competing for top honors in the Region 5 Student Paper Contest.

The Executive Committee of Region 5 will also be meeting during the conference.

Also Note

The Aerospace Applications Conference

February 3-8, 1991
Crested Butte, Colorado

PES Substation Communications Meeting

April 28 - May 2, 1991
Boulder, Colorado

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Business card ads must be actual business cards. All other ads should be provided in camera-ready format or additional set-up charges may apply. Inserts must be provided (quantity approx. 4025) and delivered to the printer.

Deadlines

March 1991 Newsletter - February 4, 1991
April 1991 Newsletter - March 6, 1991
May 1991 Newsletter - April 5, 1991

Please make checks payable to Denver Section IEEE. Send business card or ad copy and check to:
Anita Wanberg, dba Trade Services, P.O. Box 4056, Englewood CO 80155-4056, (303) 220-8042.

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International Conference on Communications

ICC-91

June 23-26, 1991, Sheraton-Denver Tech Center

Come and join us for an excellent technical program at the 1991 International Conference on Communications and Exhibition. Sunday, June 23rd through Wednesday, June 26th at the Sheraton DTC, Denver, Colorado.

The ICC '91 Conference will have a full schedule of tutorials during the conference, and a full-day workshop on Thursday after the conference. The workshop includes a luncheon for attendees. Participation in each tutorial and in the workshop will be limited to ninety attendees.

Tutorial #1: Taking Advantage of the IEEE 802.6 MAN Standard

This tutorial will cover Metropolitan Area Network (MAN) Technology, the IEEE 802.6 standard and applications including SMDS service. It will include comparisons with other technologies such as FDDI and Frame Relay and explore the implications of global connectivity that should eventually allow a user to treat the MAN as a worldwide multimegabit network.

Tutorial #2: Wireless CPE

This tutorial will outline the issues and general principles for designing low-power wireless communications systems, with a presentation of international standards, in the context of an evolution toward seamless Personal Communications Systems (PCS). The tutorial concludes with an analysis of various system architectures proposed for providing wireless office, residential, and public services.

Tutorial #3: Challenging the Quality Awards

This tutorial examines the use of the Quality Process and the Quality Awards as a means of achieving excellence. By learning from companies that have challenged for or won the Malcolm Baldrige National Quality Award and the Japanese Deming Prize, much insight can be gained into the benefits of using the award criteria for developing a quality-conscious, employee-oriented culture.

Tutorial #4: Visual Communications

This tutorial will review the state of the art in digital image processing, particularly as it relates to the JPEG, MPEG, and H.261 standards for video and still-image compression. The tutorial will also depict potential applications in the home, business, and school environments, and present advances in network architecture concepts that will provide the connectivity for the anticipated explosive growth in visual communications.

Tutorial #5: In-Building Radio Systems

This tutorial will address radio propagation, modulation, multiple-access techniques, and communications systems design as they apply to in-building radio communications. Examples of several in-building communication systems will be presented, and some of the recent standards activities will be reviewed.

Tutorial #6: Broadband Fiber Technologies in the '90s

This tutorial provides an overview of the evolving multimegabit broadband fiber communications technologies of the '90s. It will discuss BISDN, Asynchronous Transfer Mode (ATM), SONET, Distributed Queue Dual Bus (DQDB) for MAN applications, SMDS, and FDDI.

Workshop: Critical Transition Strategies for Fiber to the Loop

This workshop will focus on the important issues regarding the deployment of fiber into the Loop plant. Invited speakers will describe their views on how the transition from today's current Loop topology and media will evolve. These presentations will be given by individuals representing the following areas or organizations: researchers, exchange carriers, equipment suppliers, international PTTs, regulators, and cable television operators. Since there will be no published record, presenters and attendees will be able to actively discuss issues, new ideas, opinions, and future implementations with openness and candor.

For further information, please contact IEEE ICC '91, c/o John Tary, P.O. Box 33558, Northglenn, Colorado, 80233-0558. (303) 452-6111 ext. 443 (w), FAX (303) 457-0207.

IEEE PES/IAS 1990/1991 Meetings and Tutorials

The joint PES/IAS Society Chapter in Denver has offered tutorials for several years. Past subjects have included "Industrial Power Systems", "Symmetrical Components", "Transformers", "Induction Motors", and "Personal Protective Grounding". The tentative schedule is listed below. Look for details on registration in future newsletters.

Friday, April 5, 1991
8:00 a.m. - Noon

Location
Public Service Company Training Center
38th Ave.
Denver, CO

Topic
"Fundamentals of Relay Protection"

Speaker
William Roemish
University of Colorado at Denver

Future Meetings

March 21, 1991
"Geomagnetic Induced Currents"

April 18, 1991
IEEE Denver Section All Chapters Meeting
Topic to be announced

May 16, 1991
Tour of New Public Service Co. of Colorado "Gas Insulated Substation" in Downtown Denver

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
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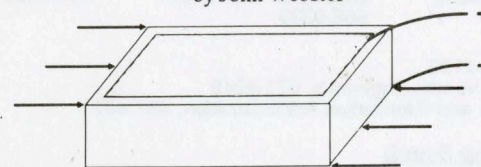
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by John Webster



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Transducers and Sensors is IEEE member priced at \$249 (\$498 non-member). For a full description of the program and complete ordering information, call IEEE today at 1-201-562-5498....Telex: 833233....Fax: 1-201-981-1686.

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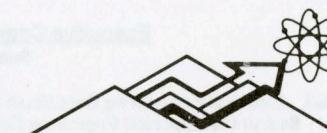
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Schedule of Conferences and Meetings

February 3-8, 1991 Crested Butte Aerospace Applications Conf.

April 12-14, 1991	Laramie	Region 5 Conference
April 28 - May 2, 1991	Boulder	PES Substation Com. Mtg.
June 23 - 27, 1991	Denver	International Communications Conf.
October 10-11, 1991	Denver	Careers Conference
May 11 - 13, 1992	Denver	Vehicular Technology Conf. (VTC '92)
October 7-11, 1991	Boulder	Ant. Meas. Techniques Assoc.
Sept./Oct. 1994	Denver	IAS Annual Meeting
September 10-14, 1995	Denver	Petroleum & Chemical (PCIC)
July, 1996	Denver	PES Summer Meeting
May 1997	Denver	MTT

Leo Mallette	(213) 334-2909
Richard Day	(714) 863-0350
Sadrul Ula	(307) 766-6268
George Flaig	(303) 452-6111
Russ Johnson	(303) 796-9100
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Mike Francis	(303) 497-5873
Paul Meisel	(303) 469-2161
John Nelson	(303) 431-7895
John Barnick	(303) 969-0391
Hussain Haddad	(303) 460-2114
John Dunn	(303) 449-1055
Claude Weil	(303) 497-5305

Proposed Conferences and Meetings

International Conference on Harmonics in Power Systems (ICHPS) 1994
PES Joint Power Generation 1994
ESMO 1996
Sections Congress 1996
Transmission & Distribution 1997
ITC 2000

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The Month at a Glance

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Aerospace Applications Conference

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Magnetic Society Meeting

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Front Range Software Quality Meeting
PES/IAS Tutorial "System Harmonics"

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EMC Meeting

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PES/IAS Meeting

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Power Electronics Meeting
APP/MTT/GRS Meeting
CS/ITS Meeting

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