

RockIEEE Overlook



September, 1995

SITTING IN THE CHAIR

by Robert Struthers

The summer will be ending in a few weeks and the Fall activities of IEEE are beginning. You will see some interesting and educational activities planned by the chapter volunteers in the following pages.

An exceptional opportunity for the members in this area is the **Petroleum and Chemical Industry Conference (PCIC)** which is being held September 11-13. The PCIC is a part of the Industry Applications Society. If you are a member of IAS you have received a copy of the Conference program. If you are not an IAS member, you may still have interest in many of the papers and tutorials being presented. These presentations, while of particular interest to those in the target industries, will also be valuable to many who are working in other industrial venues. Please see the enclosed flier for additional information on the program for the conference.

One of the primary purposes of the IEEE is the advancement of theory and practice of electrical engineering. The organizational units that carry out this purpose are the technical societies. These societies maintain committees and working groups for preparation and revision of standards and recommended practices, conferences, publication, and review of papers and proceedings. The technical societies seem to be a well kept secret in the US regions of the IEEE. In US regions, the percentage of members who are also members of a technical society is 59%. In regions outside the US, 76% of IEEE members are also members of a technical society. Benefits of Technical Society membership are receiving the Society's *TRANSACTIONS* or *REVIEW* which contain either full or abbreviated

technical papers which have been reviewed and published by the society, notices and programs of upcoming conferences, and directories of members, working groups and committees. These directories give members access to the groups which guide practice and standard making throughout the world. The technical societies also provide resources such as the distinguished lecturer program to the local chapters. Membership in technical societies is available at the time of your IEEE membership renewal. I recommend that you review the Society information that comes with the renewal information, and consider a society membership. I have been a member of two societies and believe the technical societies offer me the most value in membership.

Two technical areas that have been dormant local chapters for several years are the "**Aerospace and Electronic Systems**" and "**Instrumentation and Measurement**" societies. If there are members who wish to reactivate these chapters, please call Fred Jones, who will assist in bringing together interested parties to do that.

Elections for Denver Section officers will be held at the Annual Business meeting in October. This newsletter lists the officers that have been nominated by your Executive Board. Other nominations are encouraged, and should be submitted to the Section Chairman in writing and supported by a petition of at least ten (10) voting members of the Section.

CANDIDATES FOR ELECTION

In October, at the section meeting the annual Denver Section election of officers will occur. You are strongly encouraged to attend this meeting and vote for the candidates of your choice. Although the Executive Board only nominates one person for each office, you are entitled to

submit other names of petition candidates. Those nominated by the board for the 1996 term are: Fred Jones for Chair-Elect, Ronald DeLyser for Senior Vice Chairman, John R. Adams for Vice Chairman Member Services, Cliff Ahlston for Vice Chairman Student Activities, Kevin Wright for Secretary and David Edwards for Treasurer. The term of office is one year. If for some reason someone must resign, the nominations chairman will present a new candidate for appointment.

SIDETONES *Signals from/about the Membership*

During any calendar year the Denver Section changes a lot and presents interesting programs. However, much always remains the same. One of those things remaining the same is the need for volunteers. Due to personal work loads some of those offering their services must take a less active role. We now need an editor for the newsletter. We have had several people volunteer for portions of the work load but we need someone who has the time to pull it together and take it for composition. You do not need to type. We also need a PACE chairperson. (Professional Activities). This is a fun job that requires a few hours per month and can be done by several people.

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Those who have been involved with IEEE realize that you don't do the whole job by yourself but you break it down to small tasks for many to do. These committees can be lots of fun. Won't you call Darrell Sabatka or Bob Struthers today and get in on the fun. Volunteers are also needed for Region 5 committees.

Needing a job--have you considered using the WEB. Online Career Center and the Interactive Employment Network are two sources of job databases with approximately 2000 new job listings per week.

SOCIETY CHAPTER & SECTION MEETINGS

Magnetics Society

No information was received for the September meeting so please contact Dr. James Cates at 303-673-4126 for information.

Lasers and Electro-optics Society

Contact Robert Feuerstein, University of Colorado, 303-492-7077 for information.

Engineering in Medicine and Biology

Material was not received for publication. Please contact Norbert Kaula, CU Medical Center, 303-270-8973 for details on meeting.

Joint Computer & Information Theory

No information was received for a September meeting. Please contact: Shahzad "Shah" Bhatti at 303-673-8915 for meeting information.

Black Hill Subsection

Contact: Michael Pendo, 607-394-5278 for meeting information.

Centennial Subsection

Contact: Richard Sandige, 307-766-6181 for meeting information.

Electromagnetic Compatibility Society

This Chapter meets the second Tuesday of each month at 7PM at NIST, 325 Broadway, Boulder. All members and guests are welcome. Please check at the front desk for the room location. Contact: George Trejo, 303-350-4113

Joint Vehicular Technology & Communications Society

Contact: Mark Schriver, 303-794-0838
Topic: ANTEC's Cable Integrated Services Network (CISN). CISN is a planned fiber/coaxial network spanning households and CATV providers.

Speaker: Andrew Paff, ANTEC Corp.

When: Thursday, Sept. 14,

Time: 6:30pm Dinner

7:30pm Meeting

Place: Garcia's Mexican Restaurant

5050 S. Syracuse St. Denver Tech Ctr.

I-25 Bellevue exit (#199), drive East on Bellevue one block, turn north on Syracuse, 1/2 block to restaurant

Contact: Dave Iliff (757-1797) or Mark Schriver (303-698-9668)

Reliability Society

Contact: Sam Keene, 303-673-5963 for more information.

Joint Industry Applications & Power Engineering Society

Topic: TOUR of Public Service Company of Colorado Allison Substation

When: Thursday, Sept. 21 @ 6:00pm

NO DINNER IS PLANNED

Description: 115/13KV state of the art low profile substation incorporating 30 foot high decorative walls and in and out high voltage cable feed to meet local "neighborhood" visual requirements. Tour to be conducted by PSCO engineers. Location: 4502 S. Balsam Way, Denver which is 1 block west of Wadsworth and 1 block south of Quincy, across from the Ford dealership. Use access road on south side of substation.

RSVP: Barbara at the Peterson Company, 303-388-6322 for a Hard Hat count.

Components, Packaging, & Manufacturing Technology Society

No information received for September meeting so please contact: Michael Erni, 303-678-2437

Joint Antenna & Propagation, Microwave Theory & Techniques, and Geoscience & Remote Sensing Society

Topic: Advances in Microstrip Antennas

Speaker: Prof. K.C. Gupta, Univ. Colo.

When: Thursday, Sept. 21

Time: 4:00pm

Location: NIST, Room 1103, 325 Broadway, Boulder 80303

Contact: Richard Geyer, 303-497-5852

OTHER MEETINGS

NETfair '95 sponsored by the Rocky Mountain LAN Users Group will present a comprehensive conference and trade show featuring the latest technological advancement in computer networking technology both in the classroom and on the exhibit floor. Subjects include:

Network Basics (hardware and software), interoperability, enterprise networking, network applications, managing networks, wide area networking, new developments, network case histories, case studies. See the *Event Horizon* for more information.

CALL FOR HELP

Help Wanted: Section's Congress '96, hosted by the Denver and Pikes Peak Sections, will be held in Denver in November, 1996. The big social event of the Sections Congress will be on Saturday Night. With visitors from all over the world, we would like to do something characteristic of Colorado and the Rocky Mountains.

If you, or someone you know, is creative, likes to organize parties, and would like to help plan a really big one, your help would be very welcome. Contact John Reinert, 719-594-8005 (j.reinert@ieee.org) for more information. LET'S PARTY!!

NEWS FROM IEEE

The USAB PACE conference will be held this year in Cedar Rapids, IA during Labor Day weekend.

The average salary for US members is \$59,700 with 14% reporting salaries of \$90,000 or more. (From IEEE's 1994 Member Opinion Survey)

The IEEE Financial Advantage Program is a booklet available (1-800-GET IEEE) which lists various benefits available to the membership including Credit Cards, Financial Planning, Realty, Insurance including discount prescription plan and vision care, prepaid phone cards, etc.

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| Full Page | \$400 | \$360 |
| 1 Page Insert | \$250 | \$200 |

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Virginia Polytechnic University

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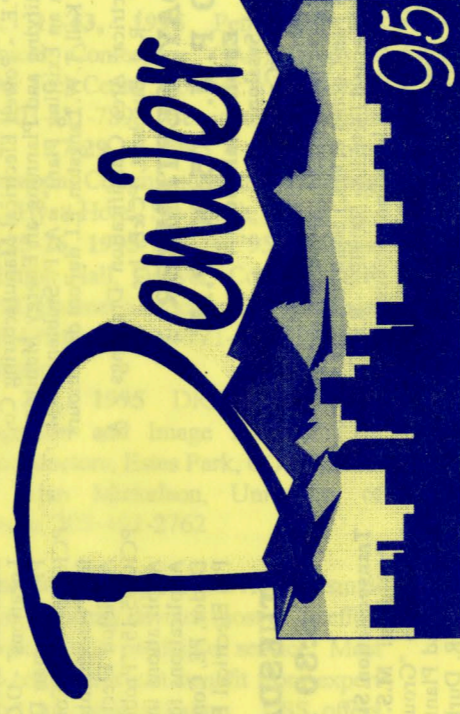
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September 11 - 14, 1995

Fall in the Colorado Rockies



IEEE  PCIC

COLORADO

Industry Applications Society
42nd Petroleum & Chemical Industry Conference

Denver Marriott Tech Center
4900 S. Syracuse St.
Denver, CO

Contact:

John Nelson - Conference Chairman
c/o NEI Electric Power Engineering, Inc.
P.O. Box 1265
Arvada, CO 80001
Tel: (303) 431-7895 or Fax (303) 431-1836

REGISTRATION

* To qualify for Advanced Registration, Fee must be mailed with registration payment no later than August 21, 1995.

Name: Last _____ First _____ M.I. _____
Badge to Read: _____
Guest Name: _____
Company: _____
Div./Dept.: _____
Address: _____
City: _____ State/Prov.: _____
Postal Code: _____ Business Phone: _____
Fax Number: _____
Special Requirements: _____
Special Meals: _____
Please Indicate:
☐ IEEE Member No. _____
☐ IEEE Sr. Member No. _____
☐ IEEE Fellow Member No. _____
☐ IEEE Student Member No. _____
☐ Young Engineer's Tues. Luncheon
☐ PCIC Executive Subcommittee
☐ First Time Attendee (Register)
☐ First Time Attendee (Guest)
☐ Life Member ☐ IAS Member
☐ Emeritus Full ☐ Emeritus Ribbon Only
☐ IAS Officer ☐ Session Chairman
☐ Author (1995 PCIC) ☐ Local Committee

Make all checks payable in U.S. Funds

TO: IEEE-PCIC 95
Mail to: Don E. Ranniger, Treasurer
c/o NEI Electric Power Engineering, Inc.
P.O. Box 1265
Arvada, CO 80001

FEE SCHEDULE

| | IEEE Memb. | U.S. DOLLARS Non Memb. Amount Due |
|--|------------|-----------------------------------|
|--|------------|-----------------------------------|

| | | |
|----------------------------|-------|-------|
| *Advance Full Registration | \$195 | \$250 |
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| At Conf. Full Registration (Full Registration includes Conf. Record, 2 lunches & Mon. PM Social) | \$250 | \$280 |
|--|-------|-------|

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|---|-------|-------|
| One Day Registration (price per day) Mon. Tues. Wed. (Circle Choices) (One day fees do not include Conf. Record, luncheon, etc.) | \$100 | \$150 |
|---|-------|-------|

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| Additional Luncheon & Social Tickets Mon. Wed. (Circle Choices) Lunch | \$25 each | |
| Monday Night Social | \$35 each | |

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| Tutorials Thursday (all 1/2 day) Advance Registration Required (Conference Registration and Advanced Registration Required) | | |
|--|--|--|

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| Tutorial A - Type 2 Protection of Motors Starters | \$55 | \$70 |
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| Tutorial B - Hazardous Location Protection Tech. | \$55 | \$70 |
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| Tutorial C - Relay Coordination | \$55 | \$70 |
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|---|------|------|
| Tutorial D - Evaluation & Diagnostic Testing | \$55 | \$70 |
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| **If not preregistered | ADD \$25 | \$25 |
|------------------------|----------|------|

Guest Tours

| | |
|--|------|
| Mon. Tour 1 - Historic City Tour | \$50 |
| Mon. Tour 2 - Colorado Springs | \$60 |
| Tues. Tour 3 - Estes Park | \$60 |
| Tues. Tour 4 - Georgetown/Silverthorne | \$45 |
| Wed. Tour 5 - Foothill Tour | \$45 |
| Wed. Tour 6 - City Tour | \$35 |

TOTAL AMOUNT DUE \$ _____

Amount Prepaid & Enclosed \$ _____

Balance Due at Conference: \$ _____

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FUNDMENTALS OF ENGINEERING (F. E.) REVIEW COURSE

A review course for the national Fundamentals of Engineering (F.E.) examination will be offered on seven consecutive Saturday mornings on the Auraria campus from 9 September to 21 October 1995. The reviews will be held in room 107 of the South Classroom Building from 0800 to 1200. No academic credit or grades are given. A certificate of attendance will be given. Some of you may remember this VERY POPULAR review course as the Engineering In Training (E.I.T.) review course.

Registration for the course does not imply eligibility to take the Colorado State Board of Professional Engineers' exam which will given on Saturday, 28 October 1995. If you plan to take the F.E. examination, your completed application must be on file with the State Board Office approximately 19 weeks prior to the exam date. It is recommended that you call the Board at (303) 894-7788 for additional information.

Tentative Autumn '95 F.E. Review Schedule

| Date: | Class: | Points | Reviewer: |
|--------|--------------------------|----------|---|
| Sep 9: | Engineering Economics | 31 | Margarete Ralston, P.E. |
| 16: | Math/Applied Mathematics | 60 | Ken Rager, Ph.D. |
| 23: | Chemistry Dynamics | 14 14 | Jack Cummins, Ph.D. Harold Zimbelman, P.E. |
| 30: | Statics | 54 | George Rowley, P.E. |
| Oct 7: | Mechanics of Materials | 25 | George Davis, P.E. |
| 14: | Thermo & Fluid Mechanics | 48 | Howard Paynter, P.E. |
| 21: | Electrical Circuits | 34 | Doyle Ellerbruch, P.E. |

*Total Points: 280

Howard L. Paynter, P.E., at: Phone: (303) 556-2977 or (303) 556-2976; E-mail: paynterh@mscd.edu; Fax: (303) 556-4385.

THE EVENT HORIZON

Sept. 11-13, 1995 Petroleum and Chemical Conference (IAS), Marriott Denver Tech Center, Contact: John Nelson, NEL, 303-431-7895 See insert for details.

Sept. 27-29, 1995 International Professional Communication Conference, IPCC, Hyatt Hotel, Savannah, GA

Oct. 25-26, 1995 NETfair '95, Curriegan Exhibition Hall, Denver, Contact: Larry McNiff, Datanet Services, Inc. Evergreen, CO 80439 or call 303-771-2000 for more information.

Dec. 3-6, 1995 DRIP VI Defect Recognition and Image Processing in Semiconductors, Estes Park, CO. Contact Prof. Alan Mickelson, University of Colorado, 303-492-2762

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MONDAY, SEPTEMBER 11
8:30 A.M. - 11:30 A.M.

Empire Ballroom

General Technical Program

Presiding: B.C. Johnson
PCIC-95-1 "Comparison of ANSI/IEEE and IEC Requirements for Metal-Clad Switchgear" - Baldwin Bridger, Jr., P.E. - Powell Electrical Manufacturing Co.
PCIC-95-2 "Justifying and Planning an Energy Monitoring System in an Existing Plant" - A. P. Stubben, C. M. Wellman, S.A. Kell, T. W. Langston, E.I. duPont deNemours & Co.
PCIC-95-3 "Electrical Area Classification Drawings - A Comparison" - R. J. Buschart, PC&E, Inc.
PCIC-95-4 "Introduction to IEEE 841-1994, IEEE Standard for Petroleum and Chemical Industry -- Severe Duty Totally Enclosed Fan-Cooled (TEFC) Squirrel Cage Induction Motors -- Up to and Including 500 HP" - R.L. Dougherty (Coordinating Author), E.I. duPont deNemours & Co.
PCIC-95-5 "Utility Rebates for Efficient Motors -- the Outlook for Demand-Side Management" - R.L. Naitlen, Wisconsin Electric Power Company.
PCIC-95-6 "Considerations When Applying ASDs in Continuous Processes" - R. A. Epperly, E.I. du Pont deNemours & Company; F.L. Hoadley, R.W. Pieter, Allen Bradley Co.

TUESDAY, SEPTEMBER 12
8:30 A.M. - 11:30 A.M.

Empire 2

Refining Subcommittee

Presiding: Scott Shannon
PCIC-95-7 "Development of a 11,000 RPM, 3500 hp Induction Motor and Adjustable Speed Drive for Refinery Service" - B.M. Wood, Chevron
Research & Technology Co.; C.L. Olsen, Jacobs/Wolder Engineering Co.; J.C. Rama, G.D. Hartzo, Ansaldo Ross Hill; F.R. Szemasi, Engineering Dynamics, Inc.
PCIC-95-8 "A User Guide to the Selection, Application, Testing and Life Expectancy of Molded Case Circuit Breakers" - W.M. Hall, Asgard Technologies, Inc.; G. Donner, B. Kahlori, Texaco Refining & Marketing, Inc.; G. D. Gregory, Square D Co.; J. Gardner, Curlee Mfg. Co.; M. Samoledeen, Killark Electric.
PCIC-95-9 "Transient Recovery Voltage Considerations in the Application of Medium Voltage Circuit Breakers" - D.L. Swindler, Square D Co.; P. Hamer, Chevron Research & Technology Co.; S.R. Lambert, Power Technologies, Inc.; P. Schwartz, Fluor Daniel, Inc.

TUESDAY, SEPTEMBER 12
8:30 A.M. - 11:30 A.M.

Empire 1

Chemical Subcommittee

Presiding: Bill Ecton
PCIC-95-10 "Reliability Comparison Between Standard & Energy Efficient Motors" - A.H. Bonnett, U.S. Electrical Motors.
PCIC-95-11 "Cost Effective Motor Surge Capability" - F. Herdous, Reliance Electric; R. L. Doughy, E.I. duPont deNemours and Co.
PCIC-95-12 "Controlling Static Electricity in Hazardous (Classified) Locations" - J.H. Kassebaum, (Retired), R. A. Kocken, Eli Lilly & Co.

TUESDAY, SEPTEMBER 12
8:30 A.M. - 11:30 A.M.

Empire 4

Production Subcommittee

Presiding: Will McBride
PCIC-95-13 "A Study of High Interrupting Capacity Equipment and Systems For Class I Hazardous (Classified) Locations" - D.C. Holloway, Crouse-Hinds; V.J. Saportia, PE, Bussman Division Cooper Industries.
PCIC-95-14 "A Comparison of New and Existing Light Sources for Petrochemical Industry" - J. A. Borton, K. Daley, Appleton Electric Co.
PCIC-95-15 "Problems and Solutions for Protective Relay Applications in Petroleum Facilities - Some Protection Applications for Generators and Transformers" - J. S. Dador, PE, Consulting Electrical Engineer; L. K. Padden, PE, Electrical Engineer Consultant.

TUESDAY, SEPTEMBER 12
8:30 A.M. - 11:30 A.M.

Empire 3

Transportation Subcommittee

Presiding: M.S. Johnson
PCIC-95-16 "Grounding System Design for Isolated Locations and Plant Systems" - M. O. Durham, THEWAY Corp.; R. Durham, West Texas Utilities.
PCIC-95-17 "Design and Applications Considerations for Motors in Steep Fronted Surge Environments" - N. Chai, Magnetek.
PCIC-95-18 "High Speed Electric Drive Applications - Experience, Potential, and Pitfalls, A Global Overview" - J. Rama, Ansaldo Ross Hill; A. Giesecke, Halmar Robicon.

TUESDAY, SEPTEMBER 12
8:30 A.M. - 11:30 A.M.

Empire 5/6

Electrochemical Subcommittee

Presiding: M.M. Cameron
PCIC-95-19 "A Transfer Function Approach to Harmonic Filter Design" - J. Phipps, NEI Electric Power Engineering.
PCIC-95-20 "Copper to Aluminum Transitions in High Direct Current Bus Systems" - W.E. Veerkamp, Dow USA-Texas Operations.
PCIC-95-21 "Practical Considerations in Applying Energy Efficient Motors in the Petrochemical Industry" - Dr. P. Pillay, University of New Orleans.

WEDNESDAY, SEPTEMBER 13
8:30 A.M. - 11:30 A.M.

Empire 2

Refining Subcommittee

Presiding: Leo Berg
PCIC-95-22 "Application of an Electrical Load Shedding System to a Large Refinery" - D.J. Lawrence, J.S.Czuba, Power Technologies, Inc.
PCIC-95-23 "Increased Safety Type 'e' Explosion Protection of Electrical Termination Apparatus" - R. Martin, Klippont Products/Weidmuller Group.
PCIC-95-24 "Use of Inverse Time, Adjustable Instantaneous Pickup Circuit Breaker for Short Circuit/Ground Fault Protection of Energy Efficient Motor" - D.W. Heath, GE-ED&C; H. L. Bradfield, Bechtel Corp.

WEDNESDAY, SEPTEMBER 13
8:30 A.M. - 11:30 A.M.

Empire 1

Chemical Subcommittee

Presiding: Dick Doughy
PCIC-95-25 "A New Approach To Enhance Power Quality For Medium Voltage Drives" - P. Hammond, Robicon Corp.
PCIC-95-26 "Optimum Pole Configuration of AC Induction Motors Used on Adjustable Frequency Power Supplies" - M. J. Melfi, Reliance Electric Co.
PCIC-95-27 "One Company's Guideline for Hazardous Area Classification" - W. Lewis, J.E. Hernandez, Eli Lilly & Co.

WEDNESDAY, SEPTEMBER 13
8:30 A.M. - 11:30 A.M.

Empire 4

Production Subcommittee

Presiding: Lorraine Padden
PCIC-95-28 "API 541 Third Edition - A Revised and Improved Purchasing Specification for Form Wound Squirrel Cage Induction Motors-250 HP and Larger" - Gary Donner, Texaco Refining and Marketing, Inc.; William Subler, Reliance Electric Co.
PCIC-95-29 "Comparative Performance of Open and Totally Enclosed Machines" - A. Mesrobian, J. Hudson, KATO Engineering Division.
PCIC-95-30 "Inferring Power Consumption and Electrical Performance from Motor Speed in Oil-Well Pumping Units" - S. G. Gibbs, Nabla Corp.; D. L. Miller, Reliance Electric Co.

WEDNESDAY, SEPTEMBER 13
8:30 A.M. - 11:30 A.M.

Empire 3

Transportation Subcommittee

Presiding: R. Wood
PCIC-95-31 "Proper Specifications & Installation of Induction Motors" - R.R. Burke, W.R. Finley, Siemens Energy & Automation, Inc.
PCIC-95-32 "Modern Scada Systems for Oil Pipelines" - D. Trung, Leeds & Northrup-Australia.
PCIC-95-33 "Electrical Transient Stability and Underfrequency Load Shedding Analysis for a Large Pump Station" - S. R. Shilling, Saudi Aramco.

WEDNESDAY, SEPTEMBER 13
2:00 P.M. - 5:00 P.M.

Empire Ballroom

General Session Safety

Presiding: C. Lockerd
PCIC-95-34 "Arc and Flash Burn Hazards at Various Levels of an Electrical System" - S. Jamil, Exxon Chem. Co.; R. A. Jones, E.I. duPont deNemours and Co.; L.B. McClung, Union Carbide.
PCIC-95-35 "Personnel Safety and Plant Reliability Considerations in the Selection and Use of Voltage Test Instruments" - H.L. Floyd, E.I. duPont deNemours; B.J. Ninninger, Dow Chemical Co.
PCIC-95-36 "Engineering Life Cycle Safety: The View from Design/The View from the Field" - S. Parkh, M.K. Morrison-Knudsen Co.; W.D. Lewis, J. L. Recchini (Retired), E.I. duPont deNemours and Co.

The Institute of Electrical and Electronics Engineers--Denver Section

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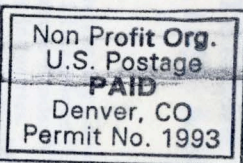
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