

IEEE
North Jersey Section Seminar
ADVANCED C LANGUAGE PROGRAMMING

Tuesday or Thursday Evenings, Starting September 25, 1990
Jersey Central Power & Light Co.,
Madison Avenue & Punch Bowl Road, Morristown, N.J.

The North Jersey Section is offering two evening classes (Tuesdays or Thursdays) for a course titled "Advanced C Language Programming." The course will focus specifically on the Microsoft QuickC compilers, on the IBM PCs and compatible computers with DOS.

The lecture will cover intermediate to advanced C programming techniques that will help experienced C programmers apply real world applications.

Students will be given assignments to do on their own IBM PC or compatible, if one is available; either at home or on the job. A **Microsoft QuickC compiler** and **two text books** will be supplied.

Prerequisites: The student should be familiar with the C Language.

The instructor is Mr. Tuan Q. Nguyen, a Systems Engineer at Jersey Central Power and Light Company.

The following list of topics to be covered will take place over 14 sessions:

(1) **Advanced C Warmup** - Basic Pointers; Function Basics; Array-Processing Functions; Functions and Strings; Functions and Two-Dimensional Arrays; Storage Classes; Function Scope; Pointers to Functions. Summary.

(2) **Binary and Text File I/O** - Text Files and Binary Files; Command Line Arguments; Low-Level I/O; Low-Level File Creation; Buffered I/O and the Standard I/O Package; Standard Files and Redirection: More Functions from the Standard Package. Summary.

(3) **Integer Forms and Bit Operations** - Integer Types; Integer Conversions and Sign Extension; Bit Operations; Using Bitwise Operators: Flag Work; Bit Fields. Summary.

(4) **Common I/O Problems and Solutions** - Buffers and Echoes; Interactive Programming; Interactive String Input; Cursor Control; Cursor Control and Interrupts. Summary.

(5) **Using Your PC's Memory** - Memory Models and Segments; Dynamic Memory Allocation; Video Memory. Summary.

(6) **Standard Library Functions** - File Permissions; Checking Files and Reporting Problems; Time with Time() ; Interrupt Handling; Signal(); Environment; Conversions; Deleting Files; Unlink(); Process Control: System(), Exec(), and Sprawn(); More File-Related Functions; Setmode(), Fileno, and Fdopen(); Text Processing with the Ctype Family; Text Processing with String Functions; Performing Math Operations. Summary.

(7) **IBM-Specific Facilities** - BIOS Calls; DOS Interrupts; Ports; Inp() and Outp(). Summary.

(8) **Test and Graphic Displays** - Revisiting the Video Displays; The Color/Graphics Adapter; More BIOS Calls; Revisiting Interrupt 10H; Nontext Use of the Graphics Mode. Summary.

(9) **Reaching into Memory** - Segmented Memory; Using Far Pointers; Buffer Functions; Direct Memory Access in the Text Mode. Summary.

(10) **Sorting and Searching** - Sorting; Searching.

(11) **Queues, Stacks, Linked Lists, and Trees** - Queues; Stacks; Linked Lists; Binary Trees.

(12) **Dynamic Allocation** - The C Dynamic Allocation System; Sparse-Array Processing; Choosing an Approach; Reuseable Buffers; The "Unknown Memory" Dilemma; Fragmentation.

Class Size will be limited to a maximum of 25 with a minimum registration of 15. Early registration is recommended. Phone Reservations will **not** be accepted. Reservations accepted after September 11, 1990 will require an additional **late fee** of \$25.

Where: Jersey Central Power & Light Co., Madison Ave. & Punch Bowl Rd., Morristown, N.J.

When: Two Classes. Tuesday Evenings 6:30-9:00 PM and Thursday Evenings 6:30-9:00 PM. Fourteen sessions starting September 25, 1990.

Cost: With Text Books and QuickC compiler, IEEE Members \$270; non-IEEE Members \$345.

With Text Books only, IEEE Members \$200; Non-IEEE Members \$275.

Contact: Mr. John A. Baka at (201) 455-8534 (Business)

Registration "Advanced C Language Programming"

To: Mr. John Baka, Distribution Engineering, JCP&L Company, Madison Avenue at Punch Bowl Road, Morristown, NJ 07960

Name _____ IEEE No. _____

Affiliation _____ Phone No. _____

Address _____

Course Date Preference: Tuesday _____ Thursday _____

Check if QuickC Compiler is needed or not Yes [] No [] Enclose required fee made payable to "North Jersey Section IEEE"

Signature _____



PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

North Jersey-IAS:
"ACCESS" Puts
You In Control

On August 16, 1990, the North Jersey Section Industrial Application Society will host a presentation on "ACCESS - The Electrical Distribution Communication System." The speaker will be Mr. Ashok Mukerji, P.E., Siemens Energy & Automation, Inc., Union, New Jersey.

About The Talk

ACCESS is the intelligence of your electrical distribution system, the information you have never had, the control you have always wanted. Engineers, accountants, executives and technicians can benefit by the ability to know where electricity is going, what is causing power surges, what is the true energy cost of any process, the power to diagnose power outages or potential outages anywhere in the facility, and the power to plan accurately for expansion needs. ACCESS plugs the decision-makers into the electrical distribution system. For the first time, energy has a boss—YOU!

About The Speaker

Ashok Mukerji, P.E., is Senior Application Engineer at Siemens Energy & Automation, Inc., a leading manufacturer of electrical power distribution equipment. He is a member of IEEE and IAS. He holds a BSEE from Indian Institute of Technology, Bombay, India and an MBA from Rutgers.

Pre-Meeting Dinner

The pre-meeting light buffet dinner starts at 6:30 PM prior to the technical presentation.

Time: 7:30 PM, Thursday, August 16, 1990. (6:30 PM, buffet dinner.)

Place: ITT Auditorium, 500 Washington Ave., Nutley, N.J.

Further Information/Reservations: Vittal Rebbapragada, Chairman, IAS Chapter (201) 804-2011; Max C. Schramm (201) 887-1120.

North Jersey Section PACE:
Starting Your
Own Business

The North Jersey Section's Professional Activities Committee for Engineers will meet on Thursday, August 9, 1990. The topic at this meeting will be "Starting Your Own Business: Is It Really What You Want?." The speaker will be Mr. Sam Benzacar.

About The Talk

The advantages and pitfalls of starting a business will be discussed. The session will be interactive in nature and will try to put some perspectives to the idea of opening a new business. Due to recent events in Europe many government programs are either delayed or scrapped altogether, and these changes often translate into layoffs. Job security

is at a low level and many engineers are not sure if their job will still be there tomorrow. The question is always, "should I start my own business?"

All your questions and more will be interactively discussed during this session. Sam Benzacar who himself started his own business, will discuss the drawbacks and the rewards. A personal assessment questionnaire will be distributed for those who want to know "do I have what it takes to start a business?"

Members and non-members are welcome.

Time: 7:30 PM, Thursday, August 9, 1990.

Place: ITT Auditorium (by the Tower), 500 Washington Avenue, Nutley, N.J.

Further Information: Robert Sinusas (201) 228-3941.

1990 Officer
Nominations

The following IEEE Members have been nominated to serve as officers of the North Jersey Section Administrative Committee (ADCOM):

Chairperson: George Graul

Vice Chairman-1: Professional Activities

Richard Snyder

Vice Chairman-2: Technical Activities

M. Liechenstein

Treasurer: David Dietsche

Secretary: Thomas DeNigris

Member-At-Large: Sergei Bogaenko

David Perry

Sam Benzacar

The official election of officers will take place in the fall and a ballot will be published in the Newsletter. IEEE members in good standing may nominate an IEEE

member or themselves for any of these positions. The term of office is: 1 January 1991 to 31 December 1991 (1 year term).

Nominations in addition to those made by the Nominating Committee may be made by petition from the membership. Such nominations must be signed by not fewer than 25 voting members of the North Jersey Section and transmitted to the Section Secretary for submission to the Executive Committee not later than October 1, 1990. The petition must certify that the person(s) nominated have agreed to serve, if elected.

The nominating committee members are:

Robert Sinusas, Chairperson

Anne Giedlinski

Howard Leach

Ken Oexle

Alan Stolpen

Richard Tax

Robert Sinusas

AUGUST, 1990

Publication No: USPS 580-500
The North Jersey Section's "The IEEE Newsletter" is published monthly except June by The Institute of Electrical and Electronics Engineers, Inc. Headquarters: 345 East 47th Street, New York, N.Y. 10017-2394. \$1.00 per member per year (included in annual dues) for each member of the North Jersey Section. Second-class postage paid at New York, N.Y. and at additional mailing offices. Postmaster send address changes to: "The IEEE Newsletter," 445 Hoes Lane, P.O. Box 1331, Piscataway, N.J. 08855-1331. USPS 580-500.

NEWSLETTER STAFF
Editor..... M.M. Perugini
Business Manager.....A.M. Beattie

Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be addressed to: The Newsletter, c/o Girard Associates, Inc., 6 Robert Terrace, Mt. Arlington, N.J. 07856 (201) 398-5524.

REPORT ADDRESS CHANGES TO:
IEEE Service Center
445 Hoes Lane, P.O. Box 1331
Piscataway, N.J. 08854-1331
(201) 981-0060

It is not necessary to inform the North Jersey Section when you change your mailing address. The NEWSLETTER and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

SECTION OFFICERS
Chairman.....Raymond W. Sears, Jr.
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579-1610
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Member-At-Large..... Tom De Nigris
Member-At-Large..... Stephen A. Laico
Jr. Past Chairman..... Howard Leach, Jr.

The North Jersey Section Executive Committee meets the first Wednesday (except holidays and December) of each month at 7 PM. These meetings (held at ITT, 500 Washington Ave., Nutley, N.J.) are open to all members. Information on each meeting agenda is available from David A. Dietsche, Section Secretary at (201) 579-1610.
Elected Section Officers are listed above.

IEEE-IAS Chapter (NJ Section) Symposium
Reliability And Risk Assessment Of
Industrial Utility Systems

Saturday, September 22, 1990 — 9:00 AM - 2:00 PM
(Registration 8:30-9:00 AM)
ITT Clubhouse, 417 River Road, Nutley, N.J.

On Saturday, September 22, 1990 the IEEE North Jersey Section Industry Application Society will host a panel symposium on the fundamental techniques dealing with Reliability and Risk Assessment (RA) of Industrial Utility Systems. The symposium will focus on the basic concepts that the engineers need to understand the various techniques that will be used for making reliability assessment and failure prediction of components and/or systems encountered in industrial/utility systems. This analysis is relevant to the evaluation of designs and/or to analyze the causes of operating system problems through statistical means. The present day management methods are increasingly demanding such type of evaluation from the engineer, before making investment decisions or appropriating maintenance budgets. The seminar will be given by speakers having hands-on experience on reliability and risk analyses and will describe fundamentals and some practical applications. Mr. R.V. Rebbapragada of Ebasco Services Inc., Chairman of IAS/North Jersey Chapter, will serve as the chairman for this panel symposium.

Selected topics include:

Fundamentals and Techniques of Reliability Analysis	Dr. M.P. Bhavafaju Fellow-IEEE PSE&G
Fundamentals and Techniques of Risk Assessment	Dr. A.J. McElroy Fellow-IEEE Ebasco Services Inc.
Failure Modes and Effects Analysis	(Speaker to be announced)
Reliability Improvement Techniques	Dr. R.W. Sears AT&T-Bell Labs
Key Statistical Estimation Concepts In Reliability Analysis	Dr. M. Liechenstein Integrated Technology Serv.
Probabilistic Risk Assessment (PRA)	Mr. R.V. Rebbapragada Ebasco Services Inc.
Failure Predictions	Dr. A.J. McElroy Ebasco Services Inc.

Registration will take place 8:30-9:00 AM. Coffee and Danish will be available. Presentation will commence soon after registration with the introduction by Mr. R.V. Rebbapragada.

The cost for this complete technical discussion—including materials, morning refreshments and luncheon is \$130 for Non-Members, \$90 for IEEE Members, and \$35 for students with valid I.D.

To reserve your place, make check or money order payable to "IEEE-North Jersey Section" and mail to Max Schramm, 8 Deerfield Rd., Whippany, NJ 07981. **Deadline: 9/10/90.**

For more information please call Vittal Rebbapragada at (201) 804-2011 or Max Schramm at (201) 887-1120.

Registration "Reliability and Risk Assessment of Industrial Utility Systems"
To: Max Schramm, 8 Deerfield Rd., Whippany, NJ 07981.

Name_____	IEEE No._____
Affiliation_____	Phone No. _____
Address_____	

Please enclose required fee made payable to "North Jersey Section IEEE"

PACE
NEWS

By Richard F. Tax

This month's article is written by Frank Lord. Frank is the past chairman of the IEEE-USA Manpower Committee. He is one of the most informed sources of information relating to engineering manpower issues.

ENGINEERING SHORTAGE?

You have probably noticed a great deal of material in the press lately about an engineering shortage. So what's new? What is somewhat different is that this material appears at the same time that there are articles about massive layoffs throughout industry, particularly in defense related industry. Engineering unemployment is at 2% and climbing while the general nationwide unemployment rate is at the relatively favorable 5.4% level (the transition unemployment level for engineers at times of full employment is 0.35%).

When one looks into these items in more detail, it turns out that none of the writers have enough information to determine if there is or will be a shortage or surplus of engineers. To do that one needs to compare supply and demand figures. There has not been one shortage story that seriously examines demand. That is not surprising, for to forecast accurately significantly far into the future is not possible. If it were, why do we have a rash of forecast articles at the beginning of each year? What these recent engineering related articles do is examine current and projected supply figures, compare them with something, and try to draw conclusions. This year's shortage articles compare present and projected supply figures with those of the last decade and seeing them to be smaller, conclude that there will be an engineering shortage. In times past when present figures were larger than past, they were compared with Japanese numbers and the conclusion made that we had to catch up. It was not mentioned that Japanese engineers are utilized differently in their work environments than are ours. Prior to the severe Japanese competition, our engineer numbers were compared with those of the Soviet Union and we were told that if we did not produce more engineers, we would lose the cold war. It was not mentioned how much cruder Soviet technology was because of the flaws in their system of government and management.

Another thing that a reader will notice is that the supply numbers used in various articles look familiar. That is because they come from only one or two sources. The sources are not necessarily accurate or authoritative, but when the numbers are repeated enough by organizations that are generally thought to be responsible, the public starts to believe them. Even *Spectrum* fell into this trap by producing a short article which appears on page 23 of the January 1990 issue and is titled "Demand to exceed supply for engineers." The supply numbers in this case were questionable and taken from a National Science Foundation (NSF) report. There was no consideration of demand in the NSF report. So the end result was that a respected publication misinterpreted a questionable report of a respected organization and gave credibility to a misleading notion. This occurred in spite of an IEEE USA position paper, "Interpretation of Engineering Supply and Demand Surveys," which suggests extreme care in interpreting this type of material.

One of the safest wagers in the world would be to bet that in any year for which an engineering shortage is projected there will not be one. The historical precedent goes back to World War II, at least.

This would be expected in most occupations in any free economy because, at least in theory, there is no such thing as a shortage in such an economy. Supply and demand come into equilibrium at some price. If the price (pay for the employee) is attractive, the supply increases. In the United States the supply of engineers is quite elastic because there are so many sources of them which include new engineering graduates, converts from mathematics and science, upgraded technicians, immigrant engineers, and people with engineering training and experience working in presently more attractive occupations. These short term sources would prevent the creation of any hardships in enterprises needing engineers until the college entrants, recognizing an attractive situation, could respond causing a rise in undergraduate enrollments and an eventual longer term adjustment.

A recent example of such forces in action was the avoidance of a shortage of petroleum engineers in the early eighties through the simple expedient of raising salary levels to about 15% above the average for all engineers. The attracted supply came in part from civil engineers who were experiencing a very soft job market, geologists, chemical engineers, mechanical engineers and upgraded technicians.

The first sign that the present surplus of engineers is being assimilated, will be the lack of headlines about more layoffs. Following that it will be easier for engineers seeking employment to cross rigid lines that exist around over-specified position descriptions. Then more engineering support positions will be created and you won't encounter as many of your colleagues at the copy machine. Employers will become concerned about maintaining the capability of the engineering staff. Engineers will notice that they are being managed and utilized better. Training and advancement opportunities will increase. The ultimate indication of an engineering shortage will be when no responsible bids are received to a responsible request for quotation for engineering work. I have never heard of that happening and don't believe that it ever will.

I hope this discussion will make the reader more skeptical about dire predictions related to our numbers or ability to meet the needs of the nation and its people. Question the sources of data. Analyze situations in fundamental economic terms. When engineer shortages are mentioned, ask "at what salary level?"

(Editor's Note: Frank Lord is all too kind in his comments about IEEE's *Spectrum* magazine. The staff at *Spectrum* are mainly concerned with doing their job. However, their job appears to be "keeping the pipeline full" of students to the engineering colleges. I believe they are part of the problem and not part of the solution.)

PACE Committee Meets Monthly

The PACE Committee meets on the second Thursday of every month at the ITT Auditorium, 500 Washington Avenue, Nutley, N.J. (near the ITT Tower) at 7:30 PM. Our Section Executive Committee meets there on the first Wednesday of every month at 7:00 PM. Contact Richard Tax at (201) 664-0803 (after 7:00 PM) or write to: R. Tax, 630 Montview Place River Vale, N.J. 07675.

Congratulations
To Our
New Senior Members

B. Gopinath
Devlin M. Gaultieri
Walter L. Hinman, Jr.
J. F. Karcher
Charles W. Lawrence
William J. Mitchell

Can you advance to Senior Member grade?

Get information and an application from Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605 (201) 461-0900, ext. 238.

NY/NJ-EMS:
Meeting Calendar

Sept. 18—Dr. Deborah Kezsbom will speak on "Building A Quality Driven ProjectTeam."

Time & Place: 7:00 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J.
Upcoming Meetings:

Oct. 23—Jack Adams, AT&T;—"Software Reliability Engineering for Development Managers."

Nov. 20— topic and speaker to be announced.

The Engineering Management Society is still looking for volunteers to help in the running of the Society. Increase your industry contacts by becoming involved. Those interested should call Al Bottani on (201) 265-7797 or Deborah Kezsbom on (201) 871-1640. DO IT NOW!

Call For Papers

The Second International Conference on Systems Integration will take place April 22-25, 1991 at the Headquarters Plaza Hotel in Morristown, New Jersey. The theme is "Managing Large-Scale Integration in the 1990s."

This conference focuses on the integration of technologies, processes and systems, and the development of mechanisms and tools enabling solutions to complex multi-disciplinary problems. A special emphasis is placed on the management of large-scale integration. The conference will provide an international and interdisciplinary forum in which researchers and practitioners can share novel research, engineering development, and management experiences. Papers should deal with recent work in theory, design, implementation, utilization and experiences of integrated processes and systems.

For further information contact:
Peter A. Ng, Department of Computer and Information Science, New Jersey Institute of Technology, University Heights, Newark, NJ 07102 or call (201) 596-3387, ng__p@vienna.njit.edu

IEEE North Jersey Section and
United Societies of Engineering & Science
of New Jersey, Inc. (USES)
HighTech PC/Workstation
Applications Conference

Wednesday, November 14, 1990 - 9:00 AM—8:00 PM
Governor Morris Inn (Royce Hotel), Morristown, N.J.

On November 14, 1990, the IEEE North Jersey Section will sponsor a one-day conference on Hi-Tech PC/Workstation Applications. USES and it's affiliated societies are cooperating in the conference planning and operation. The sessions will be divided into six tracks as follows:

- Track 1 Technology. Session Topics: HDTV, Local Area Networks, CAD/CAM/CASE, Network Control and Electronic Data Interchange.
Track 2 Physical Sciences. Session Topics: Chemistry, Chemical Engineering, Bio-medical, Pharmaceuticals.
Track 3 Manufacturing. Session Topics: Plant Operation, Product Design, Robotics, Mechanical Engineering, Statistics, Industrial Engineering.
Track 4 Systems. Session Topics: Traffic Control, Electro-optics, Cellular Phones, Transportation Work Stations.
Track 5 Analysis. Session Topics: Control System Design, Signal Processing, Finite Element Analysis, Energy Analysis and Control.
Track 6 Exhibits. Space is available for 50 exhibitors.

Registration will take place from 8:30 - 9:00 AM. Cost to the attendees registering before September 15, 1990 is \$75 for IEEE and USES Affiliates, including refreshments, lunch, and proceedings. The fee for non-members is \$100. The fee for late registration is an additional \$25. The \$20 fee for student members does not include lunch or proceedings.

USES Representatives

IEEE, D.P. Perry; ASME, Mel Human; SPSE, Maury Kahn; ISA, Robert Lindner; ISNA, Steve Lohm; TIMS/ORSA, Toon Six; NJIT, Dean-George Pincus; Stevens, Audry Smith.

For further information

Dave Perry, Conference Chair (201) 325-8415
Donald Hsu, Exhibits Chair (201) 585-1226

Registration for "Hi-Tech PC/Workstation Applications Conference"

To: Jay Shah, Conference Treasurer, 7 Tonnele Avenue, Apt. 3Q,
Jersey City, NJ 07306

Name _____ IEEE No. _____

Society _____ Member No. _____

Company _____ Phone No. _____

Address _____

City _____ State _____ Zip _____

Please make checks payable to "IEEE North Jersey Section"

NY/NJ/LI-I&M Society
Noise In Electrical
Circuits Update

The New York, Long Island and North Jersey joint Instrumentation and Measurement Society will meet on September 6, 1990. The topic (recheduled from May) will be "Noise In Electrical Circuits: An Up-To-Date Review Of Theory And Techniques For Dealing With This Problem." The speaker will be Dr. Ulrich H. Rohde.

About The Speaker

Ulrich L. Rohde is President of Compact Software and a partner of Rohde & Schwarz, Munich, West Germany, a multinational company specializing in test equipment and advanced communications systems. Previously, he was the business area director for Radio Systems of RCA, Government Systems division, Camden, N.J., responsible for implementing communications approaches for military secure and adaptive communications. Having studied electrical engineering and radio communications at the universities of Munich and Darmstadt, West Germany, he holds a PhD in electrical engineering and an ScD (hon.) in radio communications.

As a professor of electrical engineering at the University of Florida, Gainesville, Dr. Rohde has taught radio communications courses, and as an adjunct professor on the faculty of George Washington University, he has given numerous lectures worldwide on communications theory and digital frequency synthesizers. Dr. Rohde has published more than 40 scientific papers in professional journals as well as three other books: "Communications Receivers: Principles and Design," McGraw Hill, 1987; "Digital PLL Frequency Synthesizers: Theory and Design," Prentice-Hall 1983; "Transistoren bei hoechsten Frequenzen," in German, 1965, (on microwave transistors). His latest book, "Microwave Circuit Design Using Linear and Nonlinear Techniques," with co-authors George Vendelin and Anthony M. Pavio was published by John Wiley & Sons, N.Y., January 1990.

Pre-Meeting Buffet

There will be a hot buffet commencing at 6:15 PM on a first-come-first-served basis.

Time: 7:00 PM, Thursday, September 6, 1990. (Buffet starting 6:15 PM.)
Place: ITT, Tower Auditorium, 500 Washington Ave., Nutley, N.J.
Further Information: George D. Graul, Chairman I&M (201) 798-4403.



North Jersey Section Activities
AUGUST

August 9, 1990--"Starting Your Own Business: Is It Really What You Want?"--North Jersey Section's Professional Activities Committee for Engineers (PACE), 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Robert Sinusas (201) 228-3941.

August 16--"ACCESS - The Electrical Distribution Communication System"--North Jersey Section IAS, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Vittal Rebbapragada (201) 804-2011.

Upcoming Meetings

September 6--"Noise In Electrical Circuits Update"--NY/LI/North Jersey joint Instrumentation and Measurement Society, 7:00 PM, ITT, Tower Auditorium, 500 Washington Ave., Nutley, N.J. George D. Graul (201) 798-4403.

September 18--"Building A Quality Driven Project Team"--NY/North Jersey Engineering Management Society, 7:00 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Al Bottani (201) 265-7797.

September 19--"Power System Reliability Evaluation"--North Jersey Chapter Reliability Society, 7:00 PM, ITT Avionics Auditorium, 500 Washington Ave., Nutley, N.J. Henry Moss (201) 785-6458.

September 22--"Symposium: Reliability and Risk Assessment (RA) of Industrial Utility Systems"--IEEE North Jersey Section Industry Application Society, 9:00 AM-2:00 PM, Saturday, Meadowlands Hilton, Secaucus, N.J. Vittal Rebbapragada (201) 804-2011.

September 25--"Seminar: Advanced C Language Programming"--North Jersey Section, Two classes, Tuesday & Thursday Evenings (14 Sessions), 6:30-9:00 PM, JCP&L Co., Madison Ave. at Punch Bowl Rd., Morristown, N.J. John Baka (201) 455-8534 (Business).

Sept. 25-Dec. 4--"10-Week Seminar: Advanced Microwave Component Design"--North Jersey Section IEEE, Tuesdays, 6:30-9:00 PM, ITT-Avionics, Auditorium or Clubhouse, Nutley, N.J. John Baka (201) 455-8534.

Sept. 26-Dec. 12--"Accent and Speech Improvement Course"--North Jersey Section IEEE, Wednesdays 6:30-9:00 PM, JCP&L Co., Madison Ave., & Punch Bowl Rd., Morristown, N.J. John Baka (201) 455-8534.

October 17--"Gas Insulated Switchgear (GIS)"--North Jersey Section IEEE Power Engineering Society, 7:30 PM, JCP&L, Punch Bowl Road and Madison Ave., Morristown, N.J. Augie Franzoni (201) 926-6923.

November 14--"HighTech P/CWorkstation Applications Conference"--North Jersey Section and United Societies of Engineering & Science of New Jersey, Inc. (USES), 9:00 AM-8:00 PM, Governor Morris Inn, Morristown, N.J. Dave Perry (201) 325-8415.

Members, Student Members and
Non-Members Welcome
PLEASE POST

IEEE
North Jersey Section Seminar
ADVANCED
MICROWAVE COMPONENT DESIGN

Tuesdays 6:30-9:00 PM - September 25-December 4, 1990
ITT-Avionics Auditorium or Clubhouse, Nutley, N.J.

This evening course offered by the North Jersey Section IEEE, is designed for those graduate Electrical Engineers who have taken the IEEE Introductory Microwave Component Design course (or the equivalent), and who are working in the microwave design field.

The course will go into depth in the particular combination of electromagnetic and network theory that is required for efficient passive and active microwave component design. Design problems will be assigned each week. Familiarity with PC usage is helpful but not required; however, the student will use matrix combination in the design process. Equivalent circuits will be developed that will be both network and E-M based. These will form the basis for the various designs of filters, couplers, ferrite and other non-reciprocal active and passive devices. Design philosophy will cover the frequency range from 1 MHz well into the millimeter region.

The instructor is Dr. Richard V. Snyder, RS Microwave (201) 492-1207.

- (1) **September 25** - Review of electromagnetic wave theory, including temporal and spacial field variations as applicable to the "innards" of components.
(2) **October 2** - Scattering and other linear matrices, including mathematical theory and application to characterization of resonators, obstacles and structures.
(3) **October 9** - Chaining and cascading multiport networks. Application of equivalent circuit principles to lumped and distributed situations. Local equivalent circuits. Lumped networks coupled with field variables.
(4) **October 16** - Filter design from the lumped equivalent circuit point-of-view. Network transformations.
(5) **October 30** - Filter design from the distributed circuit point-of-view, including combination of lumped and distributed variables. Principles of optimization applied to active and passive filter design.
(6) **November 6** - Evanescent mode components, effects of dissipation, various printed structures. More optimization.
(7) **November 13** - Multiplexing. Common junction combinatory techniques, including crossover at less than 3 dB points. Active multiplexing.
(8) **November 20** - Coupled line principles. Directional couplers, hybrids, power dividers, magic tee, quadrature couplers, etc. Lumped and distributed versions of various coupled structures.
(9) **November 27** - Principles and equivalent networks for various ferrite and other non-reciprocal devices, including the principles of active circulators.
(10) **December 4** - Review and question week (topics of the day).

Class size will be limited to 35 maximum. Early registration is recommended. Phone reservations are **NOT** accepted. The course will not be held unless 15 registrations are received. Class notes handed out each week. Text: "Evanescent Mode Microwave Components," George Craven and Richard Skedd, Artech Books.

Where: ITT - Avionics Auditorium or Clubhouse, Nutley, N.J.
When: Ten sessions, Tuesday nights, starting September 25, 1990 from 6:30 PM to 9:00 PM.
Cost: IEEE Members \$175 (registration received by Sept. 7, 1990); non-IEEE Members \$250 (registration received by Sept. 7, 1990). Texts 1 and 2 included in the cost.
Contact: Mr. John A. Baka at (201) 455-8534 (Business)

Registration "Advanced Microwave Component Design"
To: Mr. John Baka, Distribution Engineering, Jersey Central Power & Light Co., Madison Ave. at Punch Bowl Rd., Morristown, N.J. 07960

Name_____ IEEE No._____
Affiliation_____ Phone No. _____
Address_____

Please enclose required fee made payable to "North Jersey Section IEEE"

North Jersey Reliability Soc.:
Power System
Reliability
Evaluation

The North Jersey Chapter of the Reliability Society will meet on September 19, 1990 to hear a talk on "Reliability In Public Service Power Systems." The speaker will be Dr. Murty P. Bhavaraju, Public Service Electric and Gas Company of New Jersey.

About The Talk

The talk will describe the concepts and methods used to evaluate electric power system reliability. Probabilistic methods for reliability assessment of bulk power transmission systems will be discussed.

About The Speaker

Dr. Bhavaraju received his BE (Hons) (1961) from Andhra University, India, his ME (1963), from the Indian Institute of Science and an MSc and PhD (1969), from the University of Saskatchewan, Canada. He is a registered professional engineer in New Jersey and has been with Public Service and Gas Company of New Jersey since 1969. He is currently Least Cost and Reliability Manager in the Transmission Systems Department. During 1978-79 he was on loan to the Electric Power Research Institute where he initiated several important research projects in power system reliability. From 1985 to 1987 he was a member of the North American Electric Reliability Council, Reliability Criteria Subcommittee, representing the mid-Atlantic region. He is a member of the System Reliability Task Force in the Pennsylvania-New Jersey-Maryland Interconnection of the Council.

Dr. Bhavaraju has authored more than 30 technical papers in power system reliability and system planning. He is a member of CIGRE, a Fellow of IEEE and a member of the IEEE Probabilistics Subcommittee. He was the Chairman of the IEEE Power System Engineering Committee during 1988-89.

Free Buffet

A free buffet will be provided starting at 6:00 PM, on a first-come-first-served basis.

Time: 7:00 PM, Wednesday, September 19, 1990. (Buffet starting at 6:00 PM.)
Place: ITT Auditorium, 500 Washington Avenue, Nutley, N.J.
Further Information: Henry Moss (201) 785-6458.

North Jersey Section-PES:
Gas Insulated
Switchgear

On October 17, 1990 the North Jersey Section IEEE Power Engineering Society will feature a special presentation on "Gas Insulated Switchgear (GIS)." Mr. Arun Arora will be the speaker.

About The Talk

SF₆ Gas Insulated Switchgear offered from 50 to 800 KV by ABB Power T&D Co. Inc., will be discussed. SF₆ GIS has gained worldwide acceptance as a viable alternative to the conventional open type, air-insulated High Voltage (HV) substation. Over 20 years of operational experience have established not only the greater reliability of SF₆ GIS over conventional switchgear, but also its lack of maintenance requirements and higher degree of safety. These factors, together with other advantages, such as freedom from all forms of environmental influence, space economy, environmental compatibility, etc., have established the SF₆ GIS to be the economic alternative to conventional open type HV switchgear.

About The Speaker

Mr. Arun Arora received the BSc degree in Electrical Engineering in 1959. He gained extensive experience in power generation, transmission, and distribution systems including transmission lines. He joined GEC (UK) and engineered substations in all phases of work. In 1961, he joined the power plant division of M.A.N. in West Germany and did the electrical systems planning. In 1963, he joined ABB West Germany in the power plant electrical systems planning division and later covered all equipment until transmission end of power plants. Since 1978, he is responsible for the marketing of HV equipment in the U.S, and as of 1986, responsible for the gas insulated switchgear equipment marketing with close ties to the engineering division.

He served as Secretary and Vice-Chairman of the IEEE PES, Princeton, N.J. and was an active IEEE working group member on surge arresters. He is a member of IEEE, VDE (Germany), and VDI (Germany).

Time: 7:30 PM, Wednesday, October 17, 1990.
Place: Jersey Central Power & Light Co., Punchbowl Room, Punchbowl Road and Madison Ave., Morristown, N.J.
Further Information: Augie Franzoni (201) 926-6923 or Hady Salloum (201) 829-5058.

IEEE North Jersey Section Seminar
ACCENT AND SPEECH
IMPROVEMENT COURSE

Wednesdays, 6:30-9:00 PM - September 26-December 12, 1990
Jersey Central Power & Light Co., Madison Ave., & Punch Bowl Rd., Morristown, N.J.

The North Jersey Section IEEE is offering an evening course titled "Accent and Speech Improvement." The format of this course is a combination of four seminars and eight small-group sessions. The 2-1/2 hour seminars will be attended by the entire class. The instructor is Dr. Anita E. Sicroff, Director, Corporate English.

Seminars 1 & 2: Basic principles of American English pronunciation.

Seminar 3:-Planning, chairing, listening, and participating more effectively in meetings.

Seminar 4: Techniques for improving oral presentations.

Small Group Sessions: Students will be divided according to their proficiency into three small work groups for one hour of individualized instruction on weeks 3, 4, 5, 7, 8, 9, 10, and 12.

Objectives: Lasting improvement in comprehensibility, fluency, and accent reduction.

Course Content: Primary focus is on pronunciation, with some attention to grammatical or vocabulary errors that interfere with fluency.

Assignments: Students will be given assignments and expected to make short weekly recordings which the instructor will review and comment on. The purpose of the tapes is to give feedback and monitor progress.

(1) **September 26** - Introduction: What constitutes accent; How it affects communication; How English differs from other languages; An overview of American English Pronunciation; Sounds, Rhythm, stress, & Intonation; Realistic individual goals for a 12-week course; How to practice and improve.

(2) **October 3** - Seminar. Speech organs and the articulation of vowels and consonants; Phonetic symbols; Voicing; Vowel lengthening; Ear training; Guidelines for reading phrases & sentences; Non-verbal language; Placement into groups.

(3) **October 10** - Practice with vowels according to group and individual needs. Stress patterns in compound words.

(4) **October 17** - Consonants and intonation patterns. Practice.

(5) **October 24** - Problem sounds. Rules for pronouncing -ed and -s, -es. Practice.

(6) **October 31** - Review. Pronouncing technical terms. Reading technical material.

(7) **November 7**- Seminar. Observation and videotaping of simulated meeting to discuss a chosen problem. Instructor and participant feedback and critique. Body language. Techniques for interrupting, getting a point across, opening and closing a meeting.

(8) **November 14** - Problem sounds, consonant clusters, and fluency practice.

(9) **November 21** - Contractions, blending, intonation. Practice.

(10) **November 28** - Problem sounds; fluency. How to get a point across in 30 seconds. Practice.

(11) **December 5**- Seminar: Oral Presentation Techniques: How to prepare for the presentation; How to deal with nervousness; Voice projection; position of feet and hands; eye contact; audio-visual aids.

(12) **December 12** - Wrap-Up. Small groups: individual short talks. Feedback from group to instructor and from instructor to group. Questions answered.

Class size will be limited to a maximum of 12 with a minimum registration of 8. Early registration is recommended. Phone reservations will **NOT** be accepted. Reservations accepted after September 7, 1990 will require an additional late fee of \$25.

Where: JCP&L Co., Madison Ave. & Punch Bowl Rd., Morristown, N.J.
When: Twelve sessions, Wednesday evenings, starting September 26, 1990 from 6:30 PM to 9:00 PM - Small group sessions may run to 9:30 PM.
Cost: IEEE Members \$260 (registration received by Sept. 7, 1990); non-IEEE Members \$335 (registration received by Sept. 7, 1990). Text Book included.
Contact: Mr. John A. Baka at (201) 455-8534 (Business)

Registration "Accent & Speech Improvement Course"
To: Mr. John Baka, Distribution Engineering, Jersey Central Power & Light Co., Madison Ave. at Punch Bowl Rd., Morristown, N.J. 07960

Name_____ IEEE No._____
Affiliation_____ Phone No. _____
Address_____

Please enclose required fee made payable to "North Jersey Section IEEE"