THE AX IS FALLING -
by M. Aitken

For the past year this section has been collecting data on job losses in technology companies—companies that employ engineers, programmers, and other scientists. Thank you to everyone who sent contributions to this database. Listed below is the result of our efforts—75 instances of a company or government agency cutting employment with a loss of approximately 200,000 jobs. Some cuts have occurred or are scheduled to happen over the next several months. This list should not be considered complete.

**DATE** | **COMPANY** | **LAYOFF #** | **COMMENTS**
---|---|---|---
4/5/89 | Hartman Systems | 115 | Closed
5/7/89 | Control Data Eta Sys | 150 | Closed
6/5/89 | Conner Peripherals | 200 | 
6/5/89 | Hughes Aircraft | 6000 | 
6/5/89 | Prime Computer | 240 | NH Close
6/5/89 | UTC Norwood Div | 400 | 
6/14/89 | Skorisky Aircraft | 1300 | 
6/15/89 | Grumman Sys | 900 | 
7/7/89 | BIN Comm AS (GEN) | 20 | Closed
7/3/89 | Honeywell | 300 | 
7/3/89 | H-P Apollo | 1000 | 
7/3/89 | Wang | 1700 | 
7/31/89 | Honeywell | 4000 | 
7/31/89 | Lockheed Electronics | 300 | 
8/4/89 | Ohl Hunt chemical | 120 | Closing
8/8/89 | Brooks Bros clothes | 290 | Closing
8/21/89 | Ashton-Tate | 350 | 
8/22/89 | PAR Pharmaceutical | 150 | 
8/24/89 | Campbell Soup | 2600 | 
8/24/89 | Kodak | 4500 | 
8/28/89 | Tencor (Grumman) | 47 | Closing
9/11/89 | Comport Corp | 47 | Chap 11
9/11/89 | Sprague Technologies | 10% | 
9/13/89 | PRIAM | 230 | 
10/16/89 | Data General | 2200 | 
10/22/89 | Motorola/Codex | 3000 | 
10/22/89 | UNSYS | 8000 | 
10/24/89 | Prima Computer | 2500 | 
10/30/89 | AT&T | 3400 | Early Ret
10/30/89 | CODEX | 300 | Attribution
10/30/89 | CODEX | 300 | No Fed $s
10/30/89 | Von Neumann Computer | 800 | 
11/6/89 | Sherman Lehman | 800 | 
11/6/89 | Cray Research | 400 | 
11/13/89 | Data I/O | 50 | 
11/13/89 | DAZK | 170 | 
11/13/89 | IBM | 1000 | 
11/13/89 | Wang Labs | 2500 | 
11/20/89 | Evans & Sutherland | 400 | 
12/19/89 | Lockheed Electronics | 1160 | Closing
12/21/89 | IBM | 10000 | 
1/14/90 | US CDC | 30000 | 
1/14/90 | US CDC | 20000 | 
11/16/90 | Auto Companies | 
11/16/90 | Merrill Lynch | 3000 | 
2/1/90 | Fairchild Weston | 
2/1/90 | Grumman | 
2/1/90 | Gulf Aviation | 
2/5/90 | ATT Microwave electronics | 1000 | 
2/5/90 | GE Aerospace | 5600 | 
2/5/90 | H-P | 1000 | 

**ENGINEERING LAYOFFS**

Please make copies of all articles on engineering layoffs and send to: Mike Aitken, 509 Green Pond Road, Rockaway, NJ 07865.

**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 the ITT Tower) at 7:30 PM. Our Section Executive Committee meets there on the first Wednesday of every month (except in December) at 7:00 PM. Any questions or comments will be well received. Contact Richard Tax at (201) 664-0803 (after 7:00 PM) or write to R. Tax, 630 Montview Place, River Vale, N.J. 07675.

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

**North Jersey-ISAS: “ACCESS” Puts You In Control**

On August 16, 1990, the North Jersey Section Industrial Application Industry 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, and 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, which makes the 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. (8:30 PM, buffet dinner.)

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

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

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**Upcoming Meetings**

**August 16—“ACCESS - The Electrical Distribution Communication System”—North Jersey Section ISAS, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Vitali Robbapragada (201) 894-2011.

**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. Vitali Robbapragada (201) 894-2011.

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**JULY, 1990**

**North Jersey Section Activities**

**JULY 19, 1990**—“PACE Meeting: Improving E-mail Service For Membership”—North Jersey Section’s Professional Activities Committee for Engineers, 7:30 PM, ITT Auditorium, 500 Washington Avenue, Nutley, N.J. Robert Sinzhaus (203) 229-3041.

**Upcoming Meetings**

**August 16—“ACCESS - The Electrical Distribution Communication System”—North Jersey Section ISAS, 7:30 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Vitali Robbapragada (201) 894-2011.

**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. Vitali Robbapragada (201) 894-2011.

**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) 785-6468.

**September 25—“Gas Insulated Switchgear (GIS)—North Jersey Section IEEE Power Engineering Society, 7:30 PM, JCP&L, Punch Bowl Road and Madison Ave., Morrisstown, N.J. Aepie Franzoni (201) 926-6925.

**Members, Student Members and Non-Members Welcome PLEASE POST**
North Jersey Section PACE:
Improving E-Mail Service For Membership

The North Jersey Section's Professional Activities Committee for Engineers will meet on Thursday, July 12, 1990. The topic at this meeting will be Improving E-Mail Service To IEEE Members. The Chair of the North Jersey Section will further.

About The Talk

Many members of the IEEE use computers routinely in their day-to-day work. In most cases they also utilize computer communication, either through university networks, corporate networks, the commercial email service, or through a network of PUs.

For effective communication there is a need to be able to pass messages between a variety of such systems in a manner that is simple to use by any individual. To make this easier, a RABIT Electronic Mail Ad Hoc Committee is overseeing the establishment of a "Directory Service" to cover the IEEE staff and active volunteers.

Because many of our active volunteers are associated with universities, companies, or large industries, the NSF sponsored "Internet" network is designed to support research activities, plays a key role. The IEEE Board of Directors authorized a direct Internet connection to the IEEE Service Center at Piscataway, N.J. Through such connection it is possible to reach many other systems.

The objective of the directory service is for a user to have an access in using a simple Internet address, to reach another user with a simple Internet address. This is implemented by assigning each a unique mnemonic E-Mail name so that he or her Internet address becomes "<name>"@"<domain name>". Messages received by our gateway host are then forwarded to whatever internet address the recipient specified.

Some of our volunteer members do not have access to a system that is connected to Internet, the Computer Society of the IEEE has negotiated a contract with a commercial E-Mail service (SprintMail) that has a full fledged Internet link, replacing service through Dialcom that has no Internet gateway. This service is known as "Commail". Users of Commail are assigned mnemonic names as their address on the system to messages to any other may be sent.

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 concerning each meeting agenda is available from David A. Dietsche, Secretary at (201) 579-1610. Elected Section Officers are listed above.

PACE NEWS

By Richard F. Tax

MANPOWER FLUCTUATIONS GIVE ENGINEERS GRIEF

The instability of the engineering profession is graphically represented in the Deutsch, Shea & Evans (DSE) - High Technology Recruitment Index (HTRI) shown below. Every engineer or person considering engineering as a career should be familiar with this index and the dramatic fluctuations in the demand for engineers.

Deutsch, Shea & Evans High Technology Recruitment Index

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
</tr>
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<tr>
<td>1961</td>
<td>100</td>
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However, since more engineering graduates are not getting engineering jobs and more engineers are being underutilized, the original line projected by Rivers may now be shifted by the influence of a greater supply of engineers. Rivers said, "The current recession may be worse than the recession from 1969 to 1973. (See curve.) The increased supply is derived from the recruiting of foreign students, the U.S. engineering schools, and the importation of foreign engineers. Both sources have been promoted by Engineer Shortage Propaganda (ESP) and erroneous mathematical models that only predict engineering manpower shortages. Drastic cutbacks in defense spending and the completion of engineering intensive programs such as the Space Telescope further inflates the surplus. There are very good reasons for addressing the issue of fluctuating engineering manpower demand. First, this affects the lives and careers of all engineers, recent graduates and students who may choose engineering as their field of study. Second, this indicates that the engineer shortage reports were false and the shortage scenarios were wrong. Third, this indicates priorities and budgets can be shifted from producing a surplus of engineers to utilizing engineering in research and development to maintain a fully armed R&D might be increased if it were known how many engineers are available. The DSE, High Technology Recruitment Index sheds light on the employment situation. Unemployed engineers and engineering graduates who cannot find engineering employment may find some comfort in the assurance that they are well employed for reasons beyond their control. They are facing these difficulties, not because they are poor engineers or students, but because there is a drastic manpower discrepancy between the supply and demand of engineers.

Deutsch, Shea & Evans, 1990
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 wall 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 spatial 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 - Coupling and cascading multipoint 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 23 - 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 combinatorial 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 Skord, 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 $200 (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: ____________
Affiliation: ____________
Phone No: ____________
Address: ____________

Please enclose required fee made payable to "North Jersey Section IEEE."
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 1989. 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 1989, he joined the power plant division of M.A.N. in West Germany and did the electrical systems planning. In 1989, he joined ABB West Germany in the power plant electrical systems planning 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 1998, 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 (Germay), 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 Francori (201) 952-6523 or Hady Saloum (201) 520-5058.

IEEE-IAAS Chapter (NJ Section) Symposium
Reliability And Risk Assessment Of Industrial Utility Systems
Saturday, September 22, 1990 — 9:00 AM - 2:00 PM
(Meadowlands Hilton, Secaucus, New Jersey)

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. Rebapragada 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. Bhavataju
Fellow-IEEE
FSE&G

Fundamentals and Techniques of Risk Assessment
Dr. A.J. McElroy
Fellow-IEEE
Ebacco 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. Liechteinstein
Integrated Technology Serv.

Probabilistic Risk Assessment (FRA)
Mr. R.V. Rebapragada
Ebacco Services Inc.

Failure Predictions
Dr. A.J. McElroy
Ebacco 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. Rebapragada.

The cost for this complete technical discussion—including materials, morning refreshments and lunch is $150 for Non-Members, $95 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 Vital Rebapragada 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".