

Dr. A. D. (Dee) Patton



President and Principal Electrical Engineer

Associated Power Analysts, Inc.

Principal Electrical Engineer, Forensic Electrical Engineering

Education, Licenses and Professional Associations

Dr. A.D. (Dee) Patton received the BS in Electrical Engineering from The University of Texas at Austin in 1957, the MS in Electrical Engineering from the University of Pittsburgh in 1961, and the PhD in Electrical Engineering from Texas A&M University in 1972. He is a Registered Professional Engineer in the State of Texas holding license number 25077. He is a Life Fellow of the Institute of Electrical and Electronics Engineers cited for contributions to electric power system reliability analysis and assessment and was awarded the IEEE Richard Harold Kaufmann Award in 2000 for contributions to power system reliability analysis and its application to industrial power facilities. He is a member of the National Fire Protection Association and the National Association of Professional Engineers.

Professional History and Experience

1957-1965: Engineer, Electric Utility Engineering Dept., Westinghouse Electric Corp., Pittsburgh, PA. In this period he conducted studies of electric utility systems, developed methods and software for electric utility system planning, developed methods for predicting and assessing power system reliability, and assisted in new product development and product applications.

1965-1979 and **1983-2000:** Professor, Electrical Engineering Dept., Texas A&M University, College Station, TX. Served as Head of the Electrical Engineering Dept., as Director of the Electric Power Institute, and as Director of the Center for Space Power. During this period he developed and taught courses in the area of electric power and energy systems and conducted and directed research in that area for the electric utility industry in Texas, for the Edison Electric Institute, for the Electric Power Research Institute, for the U. S. Dept. of Energy, for NASA, for

the Sandia and Oak Ridge National Laboratories, and for the IEEE. A primary focus of the research was the modeling and assessment of electric power system reliability for planning, design and operating purposes. He retired from Texas A&M University in 2000 and was named Professor Emeritus in 2005.

1973-present: President and Principal Electrical Engineer of Associated Power Analysts, Inc. Dr. Patton's consulting activities and experience are summarized as follows:

- Forensic engineering and expert witness. He has consulted, conducted forensic engineering investigations, and acted as an expert witness in more than 150 cases filed in state, federal and regulatory venues and has consulted and participated in many additional event investigations for manufacturers, utilities, commercial and industrial entities, municipalities, insurance companies, and individuals. These cases have involved electrical injuries and death by electrical contact and arc flash; electrically related fires in industrial facilities, commercial buildings, and residences; losses due to electric service outages; patent disputes; and electric utility regulatory issues.
- Engineering studies. He has conducted and directed electric power engineering studies for a variety of clients including industrial plants, electric utilities, hospitals, and research agencies.
- Development of methods and software for bulk power electric utility system reliability prediction and assessment. He has directed, conducted and co-developed methods and software for the reliability prediction and assessment of large interconnected bulk power systems for clients including EPRI, ERCOT, GE and individual electric utilities. These methods have been and are now widely used in the electric utility industry.
- Training seminars. He has presented seminars on the subject of electric power system reliability in a number of locations.

2008-2010: Unaffiliated Director, Texas Regional Entity. He served as Vice Chairman of the TRE Advisory Committee.

2008-2011: Unaffiliated Director, Electric Reliability Council of Texas, Inc. He served as Vice Chairman of the Human Resources and Governance Committee and as a member of the Special Nodal Program Committee.

Publications, Reports and Presentations

Dr. Patton has authored or co-authored some 123 papers and reports in his fields of research and has contributed to IEEE Standards 493 (Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems) and 399 (Recommended Practice for Industrial and Commercial Power Systems Analysis). Additionally, he has given lectures and presentations on diverse electric power topics at 32 venues in the US and abroad.

Dr. Chanan Singh



Principal Electrical Engineer

Associated Power Analysts, Inc.

Principal Electrical Engineer, Reliability Studies

Education:

- Ph.D., Electrical Engineering, University of Saskatchewan, Canada.
- MS, Electrical Engineering, University of Saskatchewan, Canada.
- B.S. (Honors), Electrical Engineering, Punjab Engineering College, Chandigarh, India.

Experience:

Industrial

- Vice President, Associated Power Analysts, Inc., 1980-Present.
- Senior Research Officer, Research & Development Division, Ontario Ministry of Transportation and Communication, Canada, July 1973- September 1978
- See the corporations consulted for under consultant.

Educational

- Regents Professor, Irma Runyon chair professor, 2007- present
- Regents Professor, J.W. Runyon Professor September 2005-2006
- Professor & Head, Electrical & Computer Engineering, May 1997- August 2005
- Professor & Director, Electric Power Institute, 1992-1997.
- Professor & Associate Head, Electrical Engineering, Texas A& M University, College Station, Texas, 1986-1992.
- Professor, Electrical Engineering, Texas A& M University, College Station, TX, September 1984 – 1986
- Associate Professor, Electrical Engineering, Texas A& M University, College Station, TX, September 1981 – September 1984

- Assistant Professor, Electrical Engineering, Texas A&M University, College Station, TX, September 1978 – August 1981

Government

- Director, Power Systems Program at the National Science Foundation, 1995-1996.

Consultant

- California ISO
- Central Electrical Agency, India
- Edmonton Power, Canada
- Electric Reliability Council of Texas
- Electric Power Research Institute
- Eletrobrass, Brazil
- ESKOM, South Africa
- General Electric Co.
- Houston Lighting & Power Co.
- Korea Electric Power Co.
- Korea Power Exchange
- Korea Power Systems Reliability Research Center
- Manitoba Hydro, Canada
- MCI Communications
- Mid Continent Area Power Pool
- MAPPCOR
- Ministry of Transportation & Communications, Ontario, Canada
- NE-ISO
- NYISO
- Power Comp Associates Ltd, Saskatoon, Canada
- Sandia National Labs
- Saskatchewan Power Corporation, Regina, Canada
- SOHIO, ARCO & EXXON
- Stone and Webster
- Taiwan Power Corporation
- Texas Utilities
- Urban Transportation Development Corporation, Ltd., Kingston, Ontario, Canada

Professional Licenses:

- Registered Professional Engineer, State of Texas

Honors & Awards:

External Awards

- Inaugural recipient of IEEE-PES Roy Billinton Power System Reliability Award, for “Contributions to the methodological developments, education and practice of power system reliability evaluation”, 2010

- Guest Professor, Tsinghua University, Department of Electrical Engineering (State Key laboratory of the Control and Simulation of Power System and Generation Equipments), April, 2010
- PMAPS Merit Award 2008 – Life long achievement award by the Probabilistic Methods Applied to Power Systems International Society (PMAPS), “for developing probabilistic methods for power systems”.
- IEEE Power Engineering Society, “Electric Delivery System Reliability Tutorial Award”, 2007.
- IEEE Power Engineering Society, “Outstanding Power Engineering Educator Award”, 1998 for “Innovative Leadership in Power Engineering Education”.
- Doctor of Science (peer evaluated) “For research contributions”, by the University of Saskatchewan, Canada, May 1997
- IEEE/PES Outstanding Working Group Award – 1997
- IEEE/PES Technical Committee Prize Paper Award for “Pooling Generating Unit Data for Improved Estimates of Performance Indices,” 1997
- Elected Fellow of IEEE for “Contributions to Theory and Applications of Quantitative Reliability Methods in Electric Power Systems”, 1991
- Ross Medal of the Engineering Institute of Canada for the best Electrical Engineering paper for 1972, “The Frequency and Duration Method of Generating Capacity Reliability Evaluation”, Transactions of EIC, Vol. 15, No. C-1, March 1972.

Texas A&M Awards

- Distinguished Electrical Engineering Professor, Institute of Electrical and Electronics Engineers (IEEE) Student Chapter, 2004. This was a special award by the student chapter given for the first time.
- Appointed to J.W. Runyon, jr. '35 Professorship II
- Named Texas A&M System Regents Professor, Texas A&M System, December 2001.
- Awarded the Texas A&M Former Student's Association, University Level Distinguished Award in Research (Highest university award in research), TAMU, 1997.
- Dresser Professorship, for excellence in research and education 1992-1993.
- Halliburton Professorship for excellence in research and education, 1986–1987.
- Senior TEES Fellow, for excellence in research 1989-present.
- TEES Fellow, for excellence in research 1987-89.

Technical Publications:

Three books and over 300 technical publications.

Mr. Dan Wilkerson



Principal

Associated Power Analysts, Inc.
Principal, Utility Management,
Power Supply, Power Plants

Education, Licenses and Professional Associations

Mr. Wilkerson received a BS in Mechanical Engineering from Texas A&M University in 1972. He is a Member of the Mechanical Engineering Society. He is a Past President of the Texas Public Power Association (TPPA), and Past Section Chair of the American Public Power Association. Texas Public Power awarded him their Distinguished Service Award in 1998 and 2008.

Professional History and Experience

1972-1978: Field Engineer, General Electric Corp., Schenectady, NY. In this period he worked in the installation, inspection, and maintenance of gas turbines, steam turbines, generators, and mechanical drive steam turbines. The equipment serviced was owned by utilities, chemical plants, refineries, and universities in the Gulf Coast Region.

1978-1984: Division Manager of Electric Production for the City of Bryan. In this capacity Mr. Wilkerson was responsible for the reliable operation of two power plants, the Atkins Power Plant, 130MW, and the Dansby Power plant, 110MW. Both utilized gas fired steam electric units as well as one gas turbine. He was also responsible for fuel acquisition and pipeline contracts.

1984-2012:

Director of Electric Utilities, then in 2001, General Manager of Bryan Texas Utilities. In this capacity Mr. Wilkerson had the overall responsibility for the generation, transmission,

distribution, billing, and wholesale sales of electricity for the Municipal Electric System owned by the City of Bryan. This included fuel procurement and wholesale sales both as bilateral contracts and in the daily market. Retail rate design was a major responsibility to insure adequate revenues, bond covenant coverage, and equitable charges. Testimony at the Public Utility Commission was given on Transmission Cost of Service and at the Federal Energy Regulatory Commission on the same subject. Mr. Wilkerson represented the Municipal Sector at ERCOT in the following capacities; Operating Subcommittee, Technical Advisory Committee (two separate stints), Board of Texas Regional Entity, and ERCOT Board, as well as a number of working groups. He was President of TPPA during the writing of Senate Bill 7, the Deregulation Bill, and helped with its drafting. During his tenure the system grew more than fifty percent, adding 100MW of gas turbines and thirty miles of 138KV transmission. Sales to new wholesale customers increased revenue, and technology was utilized to lower costs so that over the twenty eight years of his tenure, actual retail rates declined. Reliability indices improved so that outage lengths were reduced by two thirds.

2012-present:

Principal of Associated Power Analysts, Inc. Activities to date include:

- Power and energy procurement for a major retail restaurant.
- Rate analysis and expert testimony of wholesale electric rates
- Incident investigation of a gas turbine fire
- Rate proceedings at the PUC for wires charges for regulated companies

Publications, Reports and Presentations

Mr. Wilkerson has authored or co-authored papers and reports on power generation and the enhancements of new technology for generation, particularly in boiler controls. He has taught classes on utility management for the American Public Power Association, and has given many presentations concerning utility practice.