

Dr. John H. Matthews, P.E.
John Matthews & Associates, Inc.
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Education

Bachelor of Science in Electrical Engineering (BSEE)
Tennessee Technological University, Cookeville, Tennessee

Master of Science in Electrical Engineering (MSEE)
Tennessee Technological University, Cookeville, Tennessee

Doctor of Philosophy in Electrical Engineering (PhD)
Tennessee Technological University, Cookeville, Tennessee

Professional Engineering Registrations

Dr. Matthews is a Registered Professional Electrical Engineer in the following states:

Alabama	Georgia	Mississippi	North Carolina	Virginia
Arkansas	Kentucky	Missouri	South Carolina	Texas
Florida	Louisiana	Tennessee		

In addition, Dr. Matthews holds a certificate from the National Council of Examiners for Engineers and Surveyors (NCEES).

Professional Affiliations

American Consulting Engineers' Council (ACEC) – Member
National Society of Professional Engineers (NSPE) – Member
National Council of Examiners for Engineering & Surveying (NCEES)
Institute of Electrical and Electronic Engineers (IEEE) – Senior Member
Illuminating Engineering Society of North America (IESNA) – Member
National Fire Protection Association (NFPA) – Member
Eta Kappa Nu – Electrical Engineering Honor Society – Member

Awards and Professional Activities

Most Outstanding Alumnus, Spring 2007, Department of Electrical & Computer Engineering, Tennessee Technological University, Cookeville, Tennessee.

2000-2001 Outstanding Branch Counselor Award, presented by IEEE Region 3, December 2001.

1998 Engineer of Distinction Award, presented by Tennessee Technological University, Cookeville, Tennessee, February, 1998.

Industry Man of the Year Award, presented by the National Electrical Contractors' Association, Atlanta Chapter, August 1998.

Voted Outstanding Professor of the Year by the Senior Class of the School of Electrical and Computer Engineering, Georgia Institute of Technology, June 1994.

Chairman, Atlanta Chapter, Institute of Electrical and Electronics Engineers/Industrial Applications Society, (IEEE/IAS), 1992-93

Founding Member and First President, Southeastern Power Quality Group, 1992-93.

Professional Experience:

**1970-Present President – John Matthews & Associates, Inc.
 Consulting Electrical Engineers**

The company's services include analysis of building electrical system accidents, utility system accidents, power quality studies, workshops/seminars related to electrical safety, power quality and system design. Dr. Matthews has provided consultation and expert testimony in fires and electrical accidents related to a wide variety of electrical system components such as panel boards, switchboards, electrical busway, fluorescent, metal halide and high pressure sodium lamps, ballasts and fixtures, motors, fans, fuses, and medium and low voltage circuit breakers. He has been retained in matters related to building lighting system components such as fluorescent, incandescent and HID luminaires, as well as their related lamps and ballasts. The firm has also been retained in matters involving code compliance, adequacy of design and electrical utility territorial disputes. Dr

A partial list of clients for which the company has provided design services includes:

**Hilton Hotels
Stouffer Hotels
Kroger Company
Winn Dixie Properties
IBM Corporation
Humana Hospital Corporation
K-Mart Corporation
Storer Broadcasting Company
Ford Motor Company
Hewlett Packard Company
Murata-Erie Corporation
Dobbs In-Flight Kitchens
Marriott In-Flight Kitchens
Circuit City Stores
Belk's Department Stores
J. C. Penney's Department Stores
Koger Properties**

Clients for which the company has conducted workshops/seminars include:

**Acuity Brands, Inc/Lithonia Lighting Company
Jackson Electrical Membership Cooperative
Georgia Power Company
National Electrical Contractor's Association
Independent Electrical Contractor's Association
Institute of Electrical & Electronic Engineers – Industrial
Applications Society
Milliken & Company
International Association of Electrical Inspectors
Metro Atlanta Code Council
Georgia Society of Professional Engineers
Koger Properties, Inc.
Tennessee Technological University**

Teaching Experience:

From 1989 through 2004 Dr. Matthews served as part-time professor of electrical engineering in the School of Electrical and Computer Engineering at the Georgia Institute of Technology, Atlanta, Georgia. His courses included: Introduction to Building Electrical Systems, Introduction to Illumination Engineering and Advanced Building Electrical Systems.

Dr. Matthews has also served as a part-time professor of electrical engineering in the Department of Electrical & Computer Engineering at Tennessee Technological University, Cookeville, Tennessee. During Fall Semester, 2007 he taught a course: Introduction to the Design & Analysis of Building Electrical Systems.

Publications:

Textbook

An Introduction to the Design and Analysis of Building Electrical Systems, Van Nostrand Reinhold, New York, December 1992.

Journal Articles and Papers

“IEEE 1584 – 2002 Arc Modeling Debate,” Dr. Tammy Gammon, P.E. and Dr. John Matthews, P.E., IEEE Industry Applications Magazine, July/August, 2008.

“The IEEE 1584-2002 Arc Modeling Debate and Simple Incident Energy Equations for Low-Voltage Systems,” T. Gammon and J. Matthews, Conference Record of the IEEE IAS Industrial & Commercial Power Systems Technical Conference, Dearborn, Michigan, May, 2006.

“Incident Energy Factors and Simple 480-V Incident Energy Equations,” T. Gammon and J. Matthews, IEEE Industry Applications Magazine, January/February 2005.

“Analyzing the IEEE 1584-2002 Data Set and Developing Simple Incident Energy Equations for Low-Voltage Systems (< 1 kV), Conference Record of the IEEE IAS Industrial & Commercial Power Systems Technical Conference, Clearwater Beach, Florida, May 2004 (With Dr. Tammy Gammon, P.E)

"Conventional and Recommended Arc Power and Energy Calculations and Arc Damage Assessment," IEEE Transactions on Industry Applications, May/June 2003 (With Dr. Tammy Gammon, P.E.)

"Conventional and Recommended Arc Power and Energy Calculations and Arc Damage Assessment," accepted to IEEE IAS Industrial Commercial Power Systems Technical Conference, Savannah, GA, May 2002 (With Dr. Tammy Gammon, P.E.).

"Conventional and Current-Dependent Methods for Predicting RMS Arc Currents in Building Systems," presented at the May 2001 IEEE IAS Industrial Commercial Power Systems Conference (With Dr. Tammy Gammon, P.E.).

"Application of a Current-Dependent Arc Model to Arcing at a Main Distribution Panel, a Sub-Panel, and a Branch Circuit," presented at the 2001 IEEE SoutheastCon (With Dr. Tammy Gammon, P.E.).

"Arcing Fault Models Developed for Building System Analysis," IEEE Transactions on Industry Applications, Jan./Feb. 2001 (With Dr. Tammy Gammon, P.E.).

"Arcing-Fault Models for Low-Voltage Power Systems," IEEE Industrial & Commercial Power Systems Technical Conference, May 2000 (with Dr. Tammy Gammon, P.E.).

"The Historical Evolution of Arcing-Fault Models for Low-Voltage Systems," IEEE Industrial & Commercial Power Systems Technical Conference, May 1999 (With Dr. Tammy Gammon, P.E.)

"Microprocessor Device Installation Limitations Based on Harmonic Distortion," IEEE SoutheastCon '93, Charlotte, North Carolina, April 1993.

"Electrical Power Distortion Produced by Microprocessor-Based Office Equipment," Association for Computing Machinery, Proceedings-29th Annual Southeast Regional Conference, April 1991.

"Recursive Bound-Control Algorithms for Interval-Valued Functions," Association for Computing Machinery, Proceedings-29th Annual Southeast Regional Conference, April 1991.

"Data Analysis of a Drying Process for Moisture Contaminated Busway Systems," IEEE Industry Applications Society, October 1989.

"The Application of Interval Mathematics to Utility Economic Analysis," IEEE Power Conference, July 1989.

"A Method for Incorporating Modern Revenue Requirement Theory Into the Analysis of Power System Design Alternatives," PhD Dissertation, Tennessee Technological University, April 1989.

"Effect of Utility Distribution System Characteristics on Utilization Level Power System Fault-Current Analysis," Electrical Consultant, June 1985.

"Effect of Utility Distribution System Characteristics on Utilization-Level Power System Fault-Current Analysis," Thesis, Tennessee Technological University, March 1985.

Guest Lectures and Presentations

Presentation at the Southeastern Distribution Apparatus School & Conference, Auburn, Alabama, September 24, 2014, “Stray Voltage.”

Presentation at the Southeastern Distribution Apparatus School & Conference, Auburn, Alabama, September 23-26, 2013, “Load Studies.”

Presentation at the Southeastern Distribution Apparatus School & Conference, Auburn, Alabama, September 23-26, 2013, “Fault Current Studies.”

Presentation at the Southeastern Distribution Apparatus School & Conference, Auburn, Alabama, September 26, 2012, “Lightning, System Transients & Stray Voltage.”

Presentation at the Southeastern Distribution Apparatus School & Conference, Auburn, Alabama, September, 2011, “Forensic Engineering of Electrical Accidents.”

Presentation at The Citadel, Charleston, South Carolina, March 25, 2010, “Engineering, Design and Maintenance Decisions – Fatal Consequences.”

Georgia Fire Investigator’s Association, 43rd Southeastern Arson Seminar, Savannah, Georgia, August 2007, “Fire at One Meridian Plaza”

IEEE Student Branch, Tennessee Technological University, March, 2007, “IEEE – What It’s All About”

Institute of Electrical & Electronic Engineers – I&CPS Technical Conference, Dearborn, Michigan, May, 2006 “The IEEE 1584-2002 Arc Modeling Debate & Simple Incident Energy Equations for Low Voltage Systems”

Institute of Electrical & Electronic Engineers – IAS & I&CPS Technical Conference, Clearwater Beach, Florida, May 2004, “Analyzing the IEEE 1584-2002 Data Set and Developing Simple Incident Energy Equations for Low-Voltage Systems (<1 kV)”

Institute of Electrical & Electronic Engineers – Industrial Applications Society Workshop, Atlanta, Georgia, March 2004, “Short Circuit Analysis”

Institute of Electrical & Electronic Engineers – Industrial Applications Society, Atlanta, Georgia, January, 2004, “Design, Construction & Maintenance Decisions – Fatal Consequences”

Arc Flash Safety Seminar, Atlanta, Georgia, May 2003, “Electrical Accidents & Investigations”

The Citadel, Charleston, South Carolina, April 2003, “Electrical Safety”

**Lithonia Lighting Company Safety Workshop, Decatur, Georgia, February, 2003,
“Electrical Safety”**

**Arcing Fault Workshop, University of North Carolina at Asheville, N.C., December 13,
2002, “Arcing Accidents”**

**Electrical & Computer Engineering Department Heads’ Association, West Palm Beach,
Florida, March 2002 “IEEE Student Branch: Opportunities and Challenges”**

Jackson EMC Workshop, Jefferson, Georgia, May 2001, “Electrical Safety”

**Institute of Electrical & Electronic Engineers, Atlanta Chapter - Industrial Applications
Society, Atlanta, Georgia, September 1999, “Peachtree 25th Building Fire”**

Cottrell, Inc., Gainesville, Georgia, August 1999, Electrical Safety Workshop

**Institute of Electrical & Electronic Engineers, Atlanta Chapter - Industrial Applications
Society, Atlanta, Georgia, November 1998, “Power Metering.”**

AmericasMart, Atlanta, Georgia, July 1998, Electrical Safety Workshop

**Mitsubishi Consumer Electronics, Jefferson, Georgia, May 1997, Electrical Safety
Workshop.**

Jackson EMC, Jefferson, Georgia, April 1997, Electrical Safety Workshop.

**IEEE Student Section, Georgia Institute of Technology, Atlanta, Georgia, April 1997,
“Consulting Engineering - The Origin of Our Profession.”**

**Student Professional Awareness Conference, Tennessee Technological University,
Cookeville, Tennessee, February 1997, “Consulting Engineering - The Origin of Our
Profession.”**

**Series of Seminars for Jackson EMC, Jefferson, Georgia, 1995-96, “Fundamentals of
Building Electrical Design & Construction.”**

**IEEE Student Section, Georgia Institute of Technology, Atlanta, Georgia, January
1996, “The Fire at One Meridian Plaza - Lessons Learned.”**

**Tennessee Technological University, Cookeville, Tennessee, Electrical Safety Seminar,
October 6, 1994, "Electrical Safety"**

Independent Electrical Contractors Association, 37th Annual Convention and EXPO 94, Orlando, Florida, September 24, 1994, "Power System Harmonics"

Institute of Electrical and Electronic Engineers - Atlanta Section - Industrial Applications Society Atlanta, Georgia, April 18, 1994, "Electrical Safety"

National Electrical Contractor's Association (NECA), Atlanta, Georgia - April 20, 1994, "Electrical Safety"

International Association of Electrical Inspectors, St. Simons Island, Georgia - June 18, 1992, "Power System Harmonics"

Educational Workshop on Building Safety, College of Architecture, Georgia Institute of Technology, Atlanta, Georgia, April 9, 1992, "Safety Aspects of Building Electrical System Short Circuits and Arcing Ground Faults"

Electrical Products Trade Show, Atlanta, Georgia, February 4, 1992, "Power System Harmonics"

Institute of Electrical and Electronics Engineers - Atlanta Section - Industrial Applications Society, Atlanta, Georgia - January 20, 1992 - "Harmonic Fundamentals"

Institute of Electrical and Electronics Engineers - Atlanta Section - Industrial Applications Society, Atlanta, Georgia, October 21, 1991 - "Georgia Tech's Electrical Engineering Courses for the Building Industry"

Milliken & Company, LaGrange, Georgia - December 12, 1990 - "Harmonics in Industrial and Commercial Power Systems"

Metro Atlanta Code Council, Atlanta, Georgia - September 26, 1990 - "Moisture Contaminated Busway Systems"

National Electrical Contractor's Association (NECA), Atlanta, Georgia - September 5, 1990, "Moisture Contaminated Busway Systems"

IEEE - Tennessee Technological University, Student Section, Spring Technical Seminar and Banquet, April 25, 1990

Seminar: "How We Protect Electrical Systems"

Banquet: "Is There Life After Graduation? - Perspective on the Transition from Academic to Professional Life"

Georgia Society of Professional Engineers, Atlanta Section - April 18, 1990, "Harmonics in Industrial and Commercial Power Systems"