

SCOTT D. RASZEJA, MS, PE, IRPE, CFEI, CID+
Senior Project Engineer
Scott@AEIengineers.com



Mr. Raszeja is an electrical forensic expert with over 20 years of experience as an Electrician and Electrical Engineer. He is an expert in market certifications for products, including both product safety and electromagnetic compatibility certification. Mr. Raszeja investigates electrical faults and malfunctions, particularly those suspected of causing a fire, equipment damage, shock, or electrocution. He reconstructs failures to determine the mode, sequence, or component of failure, resulting in the damage to equipment or individuals.

EDUCATION & LICENSURE

MS, Electrical Engineering, University of Alabama at Birmingham, 2010
BS, Electrical Engineering, Milwaukee School of Engineering, 1997
Licensed Professional Engineer in Alabama, California, Colorado, Florida, Georgia, Indiana, Kentucky, Montana, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Texas
NCEES Model Law Engineer
NCEES International Registry for Professional Engineers

CERTIFICATIONS

IPC Certified Wire Harness Assembly Operator, 2022
IPC Certified - Advanced Troubleshooting and Defect Analysis of PCBs, 2021
IPC Certified Interconnect Designer Advanced (CID+) of Printed Circuit Boards, 2019
IPC Certified Interconnect Designer (CID) of Printed Circuit Boards, 2005
Certificate of Achievement (NFPA 70, National Electrical Code 2014 and 2017)
Certified Fire and Explosion Investigator (CFEI), 2016

PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronics Engineers (IEEE)
Product Safety Engineering Society (PSES – IEEE)
Industry Applications Society (IAS – IEEE)
National Academy of Forensic Engineers (NAFE)
National Fire Protection Association (NFPA)
National Society of Professional Engineers (NSPE)
IPC Designers Council (IPC)
IPC Soldered Electrical and Electronic Assemblies Task Group (IPC-J-STD-001)
IPC Acceptability of Electronic Assemblies Task Group (IPC-A-610)
National Association of Fire Investigators (NAFI)
International Association of Arson Investigators (IAAI)
Electrostatic Discharge Association (ESDA)

ELECTRICAL EQUIPMENT AND PRODUCTS

Mr. Raszeja is a product specialist with experience in reverse engineering, market certifications (UL, CE, etc.), Printed Circuit Board design, electronic design, system level design, and battery-operated devices. Mr. Raszeja also analyzes various electrical power equipment and systems including compliance with the National Electrical Code and the National Electrical Safety Code, and conducts site visits and laboratory examinations to determine the root cause of product or electrical system failures. Mr. Raszeja has designed and installed residential, commercial, and industrial electrical systems that comply with the National Electrical Code and has conducted hundreds of investigations of product and equipment failures, electrocutions, shocks, and fires.

WORK HISTORY

Senior Project Engineer, AEI Corporation, Littleton, Colorado, 2019 to Present
Project Engineer, AEI Corporation, Littleton, Colorado, 2017 to 2018

Product specialist with experience in reverse engineering, market certifications (UL, CE, etc.), Printed Circuit Board design, electronic design, system level design, and battery-operated devices. Analyzes various electrical power equipment and systems including compliance with the National Electrical Code and the National Electrical Safety Code, and conducts site visits and laboratory examinations to determine the root cause of product or electrical system failures. Designed and installed residential, commercial, and industrial electrical systems that comply with the National Electrical Code and has conducted over 400 investigations of product and equipment failures, electrocutions, shocks, and fires.

Forensic Electrical Engineer, SEA, LTD, Duluth, Georgia, 2014 to 2017

Performed electrical evaluations of failed and damaged components to determine the root cause of a failure, including evaluations of appliance and consumer product failures, damage to power or electrical systems, commercial equipment failures, electrically related fires, shocks, electrocutions, and lightning damage, as well as evaluation of product adherence to mandatory standards and industry guidelines.

Operations Manager, Xylem, Pelham, Alabama, 2008 to 2014

Retained responsibilities of R&D Manager and Engineering Manager while assuming responsibility for the Manufacturing, Fabrication, Production, Shipping and Receiving, Purchasing, and Inventory/Material Control departments. Incorporated Lean Six Sigma (LSS) principles into manufacturing to greatly reduce build and handling times and significantly increase gross margins. Set delivery times, performed contract and proposal reviews, and performed most of the end of month/quarter reporting for the Alabama division of this large public company. Acted as the primary point of contact for the Pueblo Chemical Agent Pilot Plant (PCAPP), and the Blue Grass Chemical Agent Pilot Plant (BGCAPP). Annually exceeded strategic plan while maintaining low manufacturing head count and inventory.

Research and Development Manager, Xylem, Pelham, Alabama, 2006 to 2014

Retained responsibilities of Engineering Manager while assuming responsibility for the chemical lab and Research and Development departments. Brought in-house product developments to market. Developed a partnership with another large company to design, develop, and black-label a Trihalomethane (THM) drinking-water analyzer used by water treatment facilities. This portable product was the first of its kind available in the market, and incorporated a novel detector design. Products launched on time, under budget, and with all of the certifications required for domestic and international markets.

Engineering Manager, Xylem, Pelham, Alabama, 2005 to 2014

Retained select engineering responsibilities (through 2006) while assuming responsibility for the software, mechanical engineering, and electrical engineering departments. Instrumental in helping the company achieve ISO 9000 certification. Developed all departmental guidelines and streamlined processes that resulted in a substantial increase in productivity and profitability. Managed all engineering departments to produce a gas chromatograph (GC) product line so technologically advanced and economically practical that it became sole-sourced by several government entities and government contractors.

Senior Electrical Engineer, Xylem, Pelham, Alabama, 2002 to 2006

Responsible for the design and development of a variety of scientific/industrial/commercial instruments and accessories that have accounted for millions of dollars of sales over the lifetime of the products. Incorporated microcontrollers into most of the products to reduce cost and add flexibility. Provided leadership to junior engineers.

Electrical Engineer, Xylem, Pelham, Alabama, 1999 to 2002

Responsible for R&D as well as product design and development of a product line consisting of various analytical and scientific instruments. Designed analog and digital circuits, the corresponding Printed Circuit Boards, and the firmware required to control the products.

Electrical Engineer, Vulcan Engineering, Helena, Alabama, 1998 to 1998

Designed and managed the manufacture and installation of the facility control system for a major investment casting facility. Utilized variable-frequency drives (VFDs), motor control centers, PLCs, and other control

components to safely and effectively control robots, fluidized beds, rainfall sanders, and power-and-free conveyor systems. Programmed the PLC to interface with the HMI, as well as the robot and data tracking system. Managed system installation according to the National Electrical Code and other relevant standards.

Electrician, Roman Electric, West Allis, Wisconsin, 1989 to 1992

Achieved wireman certification through the apprenticeship program. Performed service calls for existing structures, and performed electrical installations of new residential and commercial facilities. Specialized in running electrical construction projects and solving problematic electrical issues. Achieved full working knowledge of the National Electrical Code.

PUBLICATIONS

J.L. Schumacher, S.A. Sapp, & S.D. Raszeja – *The Exploding Gun Barrel Tank*, 9th International Symposium on Fire Investigations Science and Technology, National Association of Fire Investigators, Itasca, IL, September 2018

COURSES TAUGHT/PRESENTATIONS

2021 – *Evaluation of Two Proximity Warning Devices on a Mobile Elevating Work Platform*, National Academy of Forensic Engineers, Providence, Rhode Island
2021 – *Electrical Safety in the Home*, Xcel Energy, Webinar
2021 – *The Internet of Things (IoT)*, Watts, Webinar
2020 - *The Ubiquitous Printed Circuit Board: Case Studies in Hardware Failure*, DRI Product Liability Conference, New Orleans, Louisiana
2019 – *Product Failure Cases Involving Printed Circuit Board Assemblies*, AEI Corporation, Littleton, Colorado
2016 - *Residential Electricity*, Georgia Fire Investigators Association
Various - Invited Speaker on Electrical Systems at Numerous Seminars

SEMINARS AND ADDITIONAL TRAINING

2022 - Assembly Operator Training Program, IPC
2021 – Litigation Bootcamp, Kitch Attorneys & Counselors
2021 – Advanced Troubleshooting and Defect Analysis of PCBs, IPC
2020 – Florida Laws and Rules for Professional Engineers, Ezekiel Enterprises
2020 – The Potential Value of Electronic Evidence in Fire Investigations, IAAI CFITrainer.net
2020 – Introduction to Appliances, IAAI CFITrainer.net
2020 – The Deposition Part 2: Questioning Tactics and Effective Responses, IAAI CFITrainer.net
2020 - Hazardous Locations – What You Need to Know, EATON
2020 - Generator Applications and Protection, EATON
2020 - Transformer Applications and Protection, EATON
2020 - Ethics, Forensics, and the PE, NSPE
2020 - Engineering and Ethics: Serving as an Engineering Expert and Performing Forensic Engineering, NSPE
2020 - Fuseology, EATON
2020 - NEC 2020 Code Changes, EATON
2020 - Circuit Breaker Basics, EATON
2020 - Electrical Hazard Awareness, NFPA 70E, NFPA 70 and NFPA 70B the Trilogy, EATON
2020 - Arc-Fault Circuit Interrupters and Associated NEC Requirements, EATON
2020 - Ground-Fault circuit Interrupters and Associated NEC Requirements, EATON
2020 - Selective Coordination and OCPD Basics, EATON
2020 - Short-Circuit Current Calculations and Equipment Evaluations, EATON
2019 – IPC Certified Internet Designer – Advanced (CID+) Certification Program, IPC
2019 - National Academy of Forensic Engineers Summer Conference, NAFE
2018 - Florida Ethics for Professional Engineers, Ezekiel Enterprises LLC
2018 - Florida Laws and Rules for Professional Engineers, Ezekiel Enterprises LLC
2018 - Exterior Electrical Power Distribution, Ezekiel Enterprises LLC
2018 - Interior Electrical Distribution Systems, Ezekiel Enterprises LLC
2018 - A Guide to Offshore Wind Energy, Ezekiel Enterprises LLC
2018 - Photovoltaic Power Systems, Ezekiel Enterprises LLC

2018 - Systems Failure Anatomy of a Blackout, Ezekiel Enterprises LLC
2018 - NFPA 70, National Electrical Code 2017 Essentials, NFPA
2018 - Kirk's Fire Investigation, 8th Edition, IRIS Fire Investigations
2018 - Self-Driving Cars: An Examination of Ethical Issues at the Micro and Macro Scale, NSPE
2018 - Replace or Recondition: Evaluating Water-Damaged Electrical Equipment, NEMA
2018 - National Academy of Forensic Engineers Winter Conference, NAFE
2017 - NFPA 1033 and Your Career, IAAI CFITrainer.Net
2017 - Thermometry, Heat and Heat Transfer, IAAI CFITrainer.Net
2017 - 2017 National Electrical Code, National Technology Transfer, Inc.
2017 - IEEE 1584 Changes - A Guide for Performing Arc Flash Calculations, IEEE IAS Society
2017 - Battery Power Conference, Battery Power Online
2017 - Energy Storage Systems, Fire Marshal's Association of Colorado
2016 - NFPA 70, National Electrical Code 2014 Essentials, NFPA
2016 - Florida Engineer Laws & Rules, SunCam
2016 - The Deepwater Horizon Disaster, SunCam
2016 - Alabama Engineering Ethics Day, Alabama Society of Professional Engineers
2016 - UPS's and How to Size Them, IEEE IAS Society
2016 - Law and Other Intellectual Property Issues, IEEE IAS Society
2016 - NFPA 70 National Electrical Code Essentials, NFPA
2016 - NFPA 70 National Electrical Code Essentials, NFPA
2016 - NFPA 70 National Electrical Code Essentials, NFPA
2016 - NFPA 70 National Electrical Code Essentials, NFPA
2016 - Process of Elimination, IAAI CFITrainer.Net
2016 - An Analysis of the Station Nightclub Fire, IAAI CFITrainer.Net
2016 - Evidence Examination: What Happens at the Lab, IAAI CFITrainer.Net
2016 - Fundamentals of Interviewing, IAAI CFITrainer.Net
2016 - Understanding Fire through the Candle Experiments, IAAI CFITrainer.Net
2016 - Fundamentals of Residential Building Construction, IAAI CFITrainer.Net
2016 - The Impact of Ventilation in Building Structures on Fire Development, IAAI CFITrainer.Net
2016 - Electrical Safety, IAAI CFITrainer.Net
2016 - Investigating Motor Vehicle Fires, IAAI CFITrainer.Net
2016 - Introduction to Fire Dynamics and Modeling, IAAI CFITrainer.Net
2016 - Post-Flashover Fires, IAAI CFITrainer.Net
2016 - Arc Mapping Basics, IAAI CFITrainer.Net
2016 - Explosion Dynamics, IAAI CFITrainer.Net
2016 - Documenting the Event, IAAI CFITrainer.Net
2016 - The Scientific Method for Fire and Explosion Investigation, IAAI CFITrainer.Net
2016 - Fire Investigator Scene Safety, IAAI CFITrainer.Net
2016 - Assessment of Hazardous Voltage/Current in Marinas, Boatyards, Floating Buildings, NFPA
2016 - Law and Other Intellectual Property Issues, IEEE IAS Society
2015 - Power Transmission & Distribution, Basic Equipment and Terminology, Red Vector
2015 - Lighting for Vehicle Parking Facilities (RP20), Hubbell Lighting
2015 - An Effective Electrical Safety Program that Delivers, I-Gard
2015 - Electric/Hybrid/Fuel Cell Safety Course for Trucks and Buses, NFPA
2015 - NFPA 72 National Fire Alarm and Signaling Code Series, NFPA
2015 - Selective Coordination, LED Lighting, Arc Flash Mitigation, IEEE IAS Society
2015 - Battery Applications, Red Vector
2015 - HVAC Fundamentals of Refrigeration, Red Vector
2015 - Geothermal Heat Pumps, Red Vector
2015 - Georgia Fire Investigator's Association Spring Training Seminar, GFIA
2015 - Investigation of Gas and Electric Appliance Fires, Western Michigan University
2015 - Sizing Electric Utility Service Entrance Equipment, Red Vector
2015 - Transformers I - Electrical Characteristics, Red Vector
2015 - Overcurrent Protection I - Short Circuit Calculations, Red Vector
2015 - Overcurrent Protection II - Coordination, Red Vector

2015 – Commercial Electrical System Essentials, Red Vector
2015 – Electric Motors and Generators: DC Motors – Red Vector
2015 – Electric Motors, Red Vector
2015 – 2008 NEC Changes Part I Introduction, Red Vector
2015 – Arc Flash Hazard Analysis – The Basics, Red Vector
2015 – Building Systems for Designers – Electrical Appliances and Communications Equipment, Red Vector
2015 – Commercial Applications Electric Transformers, Red Vector
2015 – Compliance and Effective Testing of Emergency Power Systems, IEEE IAS Society
2015 – The Evolution of Artificial Lighting, IES
2015 – Free Me from Flicker, IES
2014 – 3D Faro Scanner, SEA, Ltd.
2014 – Grounding 101, IEEE IAS Society
2014 – Fire Sprinkler Protection for Storage, NFPA
2014 – Fire Sprinkler System Types and Applications, NFPA
2014 – Introduction to NFPA 13 and Occupancy Hazard Classifications, NFPA
2014 – Equipment Grounding and Bonding, NFPA
2014 – System Grounding and Bonding, NFPA
2014 – Overcurrent Protection, NFPA
2014 – General Installation Requirements, NFPA
2014 – Conductor Sizing, NFPA
2014 – Introduction to the NEC, NFPA
2014 – Engineering Ethics: A Conversation about Expert Witness and Engineering Review Issues, NSPE
2014 – Contractual Indemnity and Other Poison Pills: A Webinar and an Antidote, NSPE
2014 – Professional Liability Risk Management Toolbox, NSPE