

Christopher M. Swan, P.E. | Senior Forensic Electrical Engineer

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Professional Summary:

Mr. Swan has over 39 years of professional experience in the electrical consulting industry. He has practiced electrical engineering for new and remodeled residential, commercial, light industrial, and public projects for over three decades. He has experience in forensic investigations, insurance claims, lightning and fire investigations, equipment failures, litigation support, accidents, injuries, fatalities, shock and electrocutions, arc flash, illumination level analysis, construction cost disputes, arc flash studies, power quality, equipment evaluations, code reviews, peer reviews, engineering studies, and other engineering services.

Areas of Expertise are as follows:

- Shock and Electrocutions
- Arc Flash Analysis and Injury
- Equipment Failures
- Lightning Damage
- Water Damage of Electrical Equipment
- Construction Cost Disputes
- Fire Scene Processing
- Laboratory Evidence Examinations
- Scope of Repairs to Fire and Smoke Damaged Buildings
- Electrical Engineering for Buildings
- Drawing Review for Errors and/or Omissions

Licenses and Certifications:

Professional Engineer, Division of Professional Licensure, MA, License #40178

Professional Engineer, Board of Examiners for Engineers & Surveyors, NC, License #27656

Professional Engineer, Board of Professional Engineers, NH, License #14537

Professional Engineer, Department of Consumer Protection, CT, License #32210

Professional Engineer, Department of Education, NY, License #098183

Professional Engineer, Office of Professional Regulation, VT, License #018.0134430

Professional Engineer, Board of Professional Engineers, ME, License #PE15541

Project Experience:

**Jet Blue Airways, Logan International Airport, East Boston, MA
Electrocution**

Analysis of the fatal electrocution and litigation support.

**Louis Brum vs Sasso Construction, Inc., Woburn, MA
Electric Shock**

Analysis of the alleged shock injury and litigation support.

**Wendy's Restaurant, Boston, MA
Arc Flash Injury**

Analysis of the incident, the neon sign, and litigation support.

**Fortis Property Group, State Street Bank, Boston, MA
Busway Failure Explosion**

Analysis of existing conditions that lead to the failure, acted as Owner's representative, insurance claim support.

**Northeastern University, Boston, MA
Automatic Transfer Switch Failures**

Determine cause of failure to multiple automatic transfer switches and acted as Owner's representative in negotiations with automatic transfer switch manufacturer.

**Hingham Woods, Condominium Development, Hingham, MA
Lightning Damage**

Analysis of repeated lightning damage and specified mitigation solution.

**Vineyard Golf Club, Martha's Vineyard, MA
Lightning Damage**

Lightning damage assessment of electronic components of irrigation system, insurance claim support.

**Albany Street Apartments, Boston MA
Water Damaged Busway Riser**

Analysis of water damaged equipment, extent of damage assessment, insurance claim support.

**Framingham Public Library, Framingham, MA
Water Damaged Fire Alarm Control Panel**

Analysis of water damaged equipment, scope of repair assessment, insurance claim support.

**Black Rock Realty, Residential Development, Norwood, MA
Exterior Lighting Analysis – Accident Injury**

Analysis of exterior lighting illumination levels, insurance claim support.

**Famous Dave's, Metuchen, NJ
Exterior Lighting Analysis – Alleged Trip & Fall**

Analysis of the exterior lighting illumination levels, insurance claim support.

**Taco Bell Restaurant, Leominster, MA
Fire Damage Scope Assessment**

Analysis of the electric system after the fire and smoke damage, scope of repair assessment, insurance claim support.

**Boston Yacht Haven, Boston, MA
Fire Damage Scope Assessment**

Analysis of the electric system after the fire and smoke damage occurred, scope of repair assessment, insurance claim support.

**Goodwin Residence, Sturbridge, MA
Fire Investigation Scene Processing**

Fire scene investigation, evidence processing, and follow-up laboratory examination of evidence.

**Penn Plax, Fish Tank Heater, Manassas, VA
Laboratory Examination**

Attend laboratory examination of evidence, manufacturer's liability insurance claim support.

**Green Mountain Coffee, East Hampton, CT
Laboratory Examination**

Attend laboratory examination of evidence, ruled out coffee maker as the cause of the fire by review of x-ray images.

**Renaissance Gateway Hotel, Saint Louis, MO
Construction Cost Dispute**

Analysis of conceptual estimate, review of actual construction cost, review of plans and specifications for errors & omissions, litigation support.

**Nantucket Boat Basin, Hurricane, Nantucket, MA
Scope Assessment and Construction Cost Analysis**

Review the scope of repairs, review the electrical construction cost, insurance claim support.

**Greenfield Community College, Greene House, Greenfield, MA
Plans and Specifications Errors & Omissions**

Review the electrical plans and specifications for errors & omissions, litigation support.

Depositions:

Litigation CV available upon request.

Professional Experience:

EFI Global /Unified Investigations & Sciences, Inc., Sr. Forensic Electrical Engineer, 2017 – Present

Swan Engineering, Inc., Principal Electrical Engineer, 1989 – 2017

S. B. Sager & Associates, Inc., Design Engineer, 1986 – 1989

Ganteaume & McMullen, Inc., Electrical Design/Drafting, 1979 – 1986

Continuing Education:

Revisions for the 2023 National Electrical Code, Part III, NoonPi, 2024
Revisions for the 2023 National Electrical Code, Part II, NoonPi, 2024
Revisions for the 2023 National Electrical Code, Part I, NoonPi, 2024
Revisions to the 2020 National Electrical Code, Part III, NoonPi, 2024
ABCs of Engineering Ethics, The Project Management Triangle, NoonPi, 2023
Revisions to the 2020 National Electrical Code, Part II, NoonPi, 2023
Revisions to the 2020 National Electrical Code, Part I, NoonPi, 2023
Static Electricity in Industry: Preventing Explosions of Dusts and Volatile Fluids, NoonPi, 2023
Introduction to Area Classification, NoonPi, 2023
Power System Neutral Grounding Fundamentals, NoonPi, 2023
Grounding System Theory and Practice, NoonPi, 2023
Application of Capacitors on Electric Power Systems, NoonPi, 2023
Distributed Energy Resources Grid Impact – Solar – Part 1, NoonPi, 2022
Secondary Surge Protection, NoonPi, 2022
Lithium-Ion Batteries for Electric Vehicles and Transport Decarbonization, NoonPi, 2022
Electrical Forensics Engineering, NoonPi, 2021
E-041 Power System Transient Stability, PDH Star, 2021
Lithium-Ion Battery Fires, CFI Trainer, IAAI, 2021
OSHA, 29 CFR 1910 Subpart S Regulations and NFPA, Boston Safety Training Inc, 2021
E-1675 Power Cable Testing, PDH Source, LLC, 2020
Basic Electrical Connectoring, PDH Source, LLC, 2020
Ethics 1 for Professional Engineers, PDH Now, 2020
Arc Mapping Basics, CFI Trainer, IAAI, 2019
Forensic Investigation, EFI Global Inc., 2018
Small Appliance Fires, International Assoc. Arson Investigators, 2018
NEC 2017 Code Changes Generators, International Association of Electrical Inspectors, 2017
Professional Licensing, Standard of Care, Indemnity, Donovan Hatem LLP, 2017
NEC 2017 Code Changes Hazardous Locations, Int'l Association of Electrical Inspectors, 2017
NEC 2017 PV Best Practices and MA Fire Code, Solar Energy Business Assoc. of NE, 2017
NEC 2017 Code Update Short Circuit Current Ratings, Int'l Assoc. of Elec. Inspectors, 2016
NEC 2017 Code Changes, Massachusetts Electrical Contractors Association, 2016
Elec. Safety, Risk Assessment, Safety in Mfg, Dust Explosions, Am. Soc. of Safety Eng., 2016
Solar Inverters, International Association of Electrical Inspectors, 2016
Design Build Case Studies, Donovan Hatem, LLP, 2016
OSHA 30 Construction, IBEW Local 103 Joint Apprentice Training Center, 2016
Electrical Safety, International Association of Electrical Inspectors, 2015
Elec. Safety Audits, Voltage Testing, Safety Certifications, Am. Soc. of Safety Eng., 2015
Arc Flash Calculations and Mitigation, ElectroLearn, 2015
Intellectual Property, Institute of Electrical and Electronics Engineers, 2014
Fire Protection and Life Safety Seminar, Society of Fire Protection Engineers, 2014
Ground Resistance Testing, AEMC Instruments, 2013
National Electrical Code Update 2014, Int'l Association of Electrical Inspectors, 2013
Bussmann Selective Coordination, International Association of Electrical Inspectors, 2013
Focus Achieving Your Highest Priorities, Franklin Covey, 2011
Advanced Power Tools for Windows, SKM Systems Analysis Inc., 2011
Fire Alarm and Emergency Signal Systems, System Sensor Honeywell, 2010
Thermography and Power Quality, Flir & Dranetz, 2010
Fundamentals of Expert Witnessing, Seak, Inc., 2009

Education:

Power Systems Analysis I, II, III, Northeastern University, Boston, MA, 1994
Electrical Engineering, Associate Degree, Franklin Institute of Boston, Boston, MA, 1984
Don Bosco Technical High School, Electrical, Certificate in Electricity 1800 Hours, Boston, MA, 1980

Memberships:

National Fire Protection Association (NFPA)
Institute of Electrical and Electronics Engineers (IEEE)

Courses Instructed/ Guest Lecturer:

Basics of an Arc Flash Study Field Survey

Publications and Presentations:

Swan, Christopher. "Basics of an Arc Flash Study Field Survey." OSHA 30 Construction Safety and Health. January 2016.