GARY COLBURN

Senior Managing Engineer
PE

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LOCATION
Seattle, WA

BIOGRAPHY

Gary Colburn is a Senior Managing Engineer at YA Group and an expert forensic electrical engineer with more than 13 years of experience in forensic investigations and failure analysis. He has served as an expert witness and led investigations for subrogation and liability losses involving fire and water damage to properties, downed electrical lines and system failures causing wildfires, and electric shock and injury to the public.

Gary has extensive experience in power utility engineering, drawing on 30 years as a power system engineer in the design and failure analysis of transmission and distribution systems, wood loading design and failure, power cable failure, transformer and regulator explosions, natural gas home explosions caused by a power company electrical fault, power system protection, fuses, and reclosers. He also has knowledge of generation, substation design, and system harmonics, and of how the power system affects a customer's home electrical and plumbing systems.

Gary's additional experience includes high voltage insulation testing of Romex wiring exposed to water, in-building switchgear failures, and vertical bus failures in high-rise buildings. He applies the National Electrical Safety Code (NESC) and the National Electrical Code (NEC) to utility design and in-building wiring installation, and he conducts contractor defect analyses in homes and businesses, as well as failure analyses of solar systems on homes and solar farms.

CREDENTIALS

- **PE** | Professional Engineer

REPRESENTATIVE CONSULTING ASSIGNMENTS

- Commercial Building Fire | Seattle, WA | Acted as Principal Consulting Engineer in the defense of a $15 million frozen food building fire.
- Multi-Level Apartment Complex Fire | Everett, WA | Determine cause of a multi-story apartment complex fire.
- Electrocution | Provided deposition testimony, citing crucial language from the National Electrical Safety Code (NESC), of the incident which injured a painter who made contact with high voltage wires due to proximity to the building resulting in a settlement of the case and a win for the client.
- Sports Complex | Seattle, WA | Led the design and engineering of 26kV switchgear, electrical vaults, and multiple feeders for Seattle Seahawks and Mariners stadiums.
- Post Office | Carson, Washington | Building Fire | Solved the fire where a voltage surge suppressor box caught on fire and burned down the post office. The fire was caused by the power company corner pole fuse blowing and shutting off the property side power line. The power continued on the other two lines to a transformer that allowed the property side power line to be energized from the opposite end causing the post office to be downstream from a sustained underground fault which resulted in "Dirty Power", to flow into the post office to the surge suppressor. This Dirty Power was Harmonics, and it flowed to the surge suppressor and caused the fire. The fuse blowing outside the building caused the building to burn down!

PROFESSIONAL EXPERIENCE

- **2023 - Current** | Senior Managing Engineer | YA Engineering Services
- **2018 - 2023** | Principal Forensic Electrical Engineer | EFI Global
- **2014 - 2018** | Forensic Electrical Engineer | Unified Investigations & Sciences
- **2013 - 2014** | Electrical Distribution Engineer | Snohomish PUD
- **2011 - 2013** | Transmission and Distribution System Planning | Seattle City Light
- **1984 - 2011** | Principal Power System Engineer & Engineering Manager | Seattle City Light

PRACTICES & SKILLSETS

- Computer Programming
- Condition Assessment
- Failure Analysis
- Fire Origin & Cause
- Infrared Thermography
- Lithium Battery Investigations
- NEC & NESC Expertise

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- Power Electronics
- Power Generation
- Power Quality and Harmonic Analysis
- Products Liability
- Solar Array Inspection
- Transformer Failure Analysis

EDUCATION

- Washington State University - Bachelor of Science (BS) - Electrical Engineering - Power Option - Pullman, Washington
- Class III Asbestos Operations & Maintenance - 2014-2022 (Annually)
- University of Alaska - Fundamentals of Arctic Engineering - 2021 - Alaska
- National Fire Protection Agency 1033 - Session 1 & 2, Fire Science & Dynamics and Thermodynamics & Thermometry - 2017
- International Association of Arson Investigators (IAAI) - NFPA 921 and 1033: Important Revisions - 2014
- International Association of Arson Investigators (IAAI) - Arc Mapping Basics - 2014
- International Associate of Arson Investigators (IAAI) - Basic Electricity - 2014
- International Associate of Arson Investigators (IAAI) - Process of Elimination - 2014
- National Electrical Safety Code (NESC) Training - David J. Marne, PE, Marne & Associates - 2009
- IEEE P&E Society Meeting - Harmonics - 2005 - Dallas, Texas
- National Electrical Code (NEC) Training - NFPA 70 - 1999
- Seattle City Light - Symmetrical Components - 1999
- Solar Power Part I - Design for Small Structures
- Solar Power Part II - Design for Grid-Tie Systems
- Solar Power Part III - Design Considerations
- Solar Power Part IV - Inspecting and Evaluating Systems
- Solar Power Part V - Installing Systems
- Water Systems and How They Fail
- Design of Hybrid Power Plants
- Electrical Storage Guide for Electrical Engineers
- Best Practices for O&M of Photovoltaic and Energy Systems

AFFILIATIONS

- International Association of Arson Investigators (IAAI)
- The Institute of Electrical and Electronic Engineers
- Power and Energy Society

LICENSES

- Professional Electrical Engineer - Washington - License #26471
- Professional Electrical Engineer - Oregon - License #90151PE
- Professional Electrical Engineer - Idaho - License #P-16599

SERVICE SPECIALTIES

- **Forensic Engineering & Architecture** | Design & Code Review, Repair Drawings, Engineering, Electrical, Fire & Explosion Investigations, Forensic Engineering – Litigation Support and Expert Witness, Construction Defect Investigations, Forensics, Premises Liability, Laboratory & Testing, Non-Destructive Testing, Product Liability

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