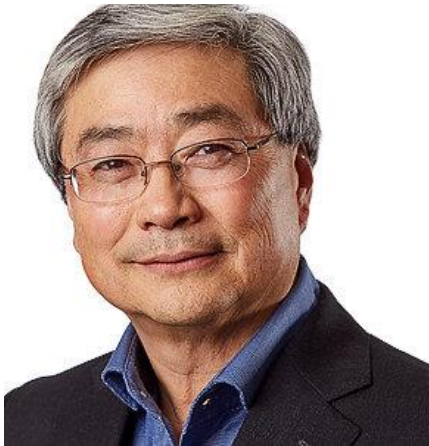


Brent Fukuda

B.Sc.E.E., P.E., P. Eng., CFEI



1336 Sandhill Drive
Ancaster, Ontario
L9G 4V5

EDUCATION

Bachelor of Science in Electrical Engineering
University of Calgary, 2006

Industrial Electronics Technology
Southern Albert Institute of Technology, 1980

TECHNICAL AFFILIATIONS

Nevada State Board of Professional Engineers & Land Surveyors (NVBOE)
Association of Professional Engineers & Geoscientists of Alberta (APEGA)
Satellite Broadcasting & Communications Association (SBCA)
International Association of Arson Investigators (IAAI)
National Fire Protection Association (NFPA)
National Association of Fire Investigators (NAFI)
Institute of Electrical & Electronics Engineers, Inc. (IEEE)
Fire Investigator Association, Alberta, 2009
Canadian Association of Technical Accident Investigators and Re-constructionists
Illumination Engineering Society (IES)
Canadian Wind Energy Association (CanWEA)
Society of Automotive Engineers (SAE)

CERTIFICATION

Certified Fire and Explosion Investigator (CFEI)

PROFESSIONAL EXPERIENCE

2017 - Present

Forensic Electrical Engineer/Fire and Explosion Investigator, **Origin and Cause Inc.**
Mississauga, Ontario

- Responsible for conducting Fire and Explosion Investigations
 - Residential structure fires
 - Large commercial property losses
 - Electro-mechanical failure analysis
 - Scene examination and documentation including arc mapping
 - Electronic component and circuit failure analysis
 - Electrical component circuit failure analysis
 - Electrical code issues
 - Electric shock and electrocution
 - Fire investigation
 - HVAC control and failure
 - Solar photo-voltaic component and circuit analysis

2010 to 2017

Forensic Electrical Engineer and Fire Investigator, **AEI Corporation**
Littleton, Colorado

- Responsible for conducting fire and explosion investigations, electrical and electronic failure analysis, scene examination and documentation, arc mapping, and electrical analysis and code compliance issues.
- As a forensic electrical engineer, I observe NFPA 921, ASTM, and other industry standards with respect to scene examination, evidence collection, and laboratory examination of retained evidence.
- As a Project Engineer, I oversee projects to their completion, from intake to invoicing. Many losses included a review of equipment installation, recall and design reviews, code review, failure and root cause analysis, scene inspection

and management, evidence collection, expert report writing, and expert witness deposition and testimony.

Areas of expertise:

- Electronic component and circuit failure analysis
- Electrical component circuit failure analysis
- Electrical code issues
- Electric shock and electrocution
- Fire investigation
- Vehicle electrical fire and mechanical failure analysis
- HVAC control and failure
- Solar photo-voltaic component and circuit analysis

2008 to 2012

Forensic Electrical Engineer and Fire Investigator, **SAMAC Engineering**
Calgary, Alberta

- Accident reconstructions and investigations, including low-speed incidents, photographic scene documentation, vehicle fires and losses.
- Vehicle failure analysis, including component failures and recalls.
- Origin and cause investigations using NFPA 921, NFPA 1033, and ASTM standards.

2006 to 2008

Electrical Design Engineer and Research and Design, **ATCO Structures Inc.**
Calgary, Alberta

- Designed and implemented large-scale design projects, including laboratory and multi-person work camp structures.
- Consulted to troubleshoot on projects looking for a Certificate of Occupancy, in areas of building and electrical codes and fire alarm systems.
- Designed and implemented a surface mounted wiring harness system. This system included the design, layout, and installation of a surface-mounted wiring harness system/process, which could be installed in less than half the time of conventional wiring methods. The wiring harness system design included a harness manufacturing station and training systems for plant personnel.
- Designed and built a prototype fire-pump unit for use in extreme cold climate conditions, including FACP (fire alarm control panel) interface and installation application for the unit's UL approval.

2004 to 2005

Electrical Design Engineer (Summer Student), **Eaton Electrical/Cutler Hammer Inc.**
Airdrie and Calgary, Alberta

- Created and maintained an LMS (Learning Managed System) on the company intranet for plant personnel training. This system provided opportunities for ESL (English Second Language) personnel intimidated by their language skills. The LMS allowed all personnel to upgrade, learn, train and be tested in the requisite skills and levels required by their department. New employees could be briefed and pre-trained prior to their first shift.
- Worked on and created part of a SCADA system to connect and monitor electrical devices using a remote web server (JAVA).
- Trained and worked in the assembly of surge protective devices, complete home/light commercial systems and fire pump controllers.

1985 to 1996

Journeyman Electrical / Electronics Technician, **The Calgary Herald**

Calgary, Alberta

- Maintained, diagnosed and repaired, designed and installed computer, printer, and prepress systems required to produce a daily newspaper. Systems included full-page camera systems, developer and processing systems, high voltage lighting and exposure units, light measuring meters, cutters, associated Mac, PC, camera and flash systems, and power supplies.

1983 to 1985

Intermediate/Senior Electronics Service Technician, Ahearn & Soper Inc.

Calgary, Alberta

- Serviced mainframe computer systems including DEC (Digital Equipment Corporation) and IBM.
- Serviced, installed and repaired peripheral systems such as electrostatic plotters, X-Y plotters, dot matrix printers, laser printers, tape drive logging systems, including other electro-mechanical systems and controls.
- Diagnosed and repaired component level power supplies and electromechanical systems, and maintained and provided Western Canada technical support for Benson/Varian (factory trained) electrostatic plotter controllers and systems.

1980 to 1983

Junior/Intermediate Electronics Technician, Westronics Systems Ltd./DATAP Systems Ltd.

Calgary, Alberta

- Designed, maintained, performed troubleshooting, repaired, and installed electro-mechanical and SCADA systems.
- Test final operations and quality control of manufactured SCADA devices as part of the manufacturing test and service department.
- Designed and built memory systems including an EPROM blasting unit.
- Installed and manufactured communication and power cables.
- Performed data test series to check for the correct communication and handshake protocols.
- Provided technical support, remote troubleshooting and repair services, as well as in-field repair and installation of SCADA systems.
- Diagnosed and repaired component level digital/analog monitoring systems, power supplies, and micro-computer hardware.

PUBLICATIONS AND PRESENTATIONS

- Open Neutrals: The Point of “No Return” (Cameron Novak/Brent Fukuda) IAAI Fire & Arson Investigation, Volume 64, Issue 2, October 2013
- Arc Mapping 101, September 2009
- Virtual Versus Real Design of a Traffic Light/Voice Controller (University of Calgary: Phil Daum, Nick Jensen, Brent Fukuda), 2005
- Electricity and Fire Investigations, Rocky Mountain Property Claims Association, July 2015
- What You Don’t See Can Hurt You (Webinar), National Association of Subrogation Professionals NASP, October 2014
- Origin & Cause 101 (Electrical), AEI Corporation Seminar, February 2014
- Electrical Myths, AEI Corporation Seminar, August 2013
- Electricity and Fire Investigation, AEI Corporation Seminar, February 2013
- Electrical Safety at the Construction Site, AEI Corporation Seminar: OSHA Construction Safety, May 2012
- Electrical Systems: Building Code Assessment, EPIC: Educational Program Innovation Center, May 2009

FURTHER TRAINING AND EDUCATION

- *Fundamentals of PV Design*, INGECON Sun Training, On-Going
- *Solar Power Plant Design Fundamentals*, Electric Utility Consultants, Inc. (EUCI), March 2015
- Media Training, Coleman & Company, Denver, Colorado, July-August 2013
- Center Stage Program, Coleman & Company, Denver, Colorado, August 2013
- Expert Witness, National Institute for Trial Advocacy (NITA), Boulder, Colorado, July 2013
- OSHA Confined Space Safety, ABAG Training, March 2011
- Investigation of Gas and Electric Appliance Fires, Fire Findings, Benton Harbor, Michigan, November 2010
- Building Code Assessment, EPIC, Calgary, Alberta, May 2009
- Fire Dynamics & Post Flashover Fire Patterns, Fire Investigation Association of Alberta (IAAI Chapter 38), April 2009
- Vetronix/Bosch Crash Data Retrieval Technician, CSI Crash Data Retrieval Specialist, Edmonton, Alberta, September 2008
- Canadian Electric Code, CSA Canada, Calgary, Alberta, October 2006
- National Electric Code – Canadian Electric Code, CSA Canada, Calgary, Alberta, November 2006

IAAI TRAINING AND RELATED COURSES

- Writing the Initial Origin and Cause Report, September 2017
- Motor Vehicles: The Engine and the Ignition, Electrical, and Fuel Systems (3 hours tested), June 2017
- Motor Vehicles: Transmission, Exhaust, Brake, and Accessory Systems (3 hours tested), June 2017
- Evidence Examination: What happens at the lab? (4 hours tested), June 2017
- Effective Investigation and Testimony (3 hours tested), December 2016
- Digital Photography and the Fire Investigator (4 hours tested), December 2016
- Investigating Fatal Fires (4 hours tested), December 2016
- Critical Thinking Solves Cases (4 hours tested), July 2016
- An Analysis of The Station Nightclub Fire (4 hours tested), July 2016
- NFPA1033 and Your Career (2 hours tested), October 2015
- Ethics and the Fire Investigator (3 hours tested), October 2014
- Documenting the Event (4 hours tested), June 2014
- Residential Electrical Systems (4 hours tested), April 2014
- Electrical Safety (3 hours tested), March 2014
- Basic Electricity (4 hours tested), March 2014
- 40-HR Fundamentals of Fire Investigation CO (40 hours tested), February 2014
- Post flashover Fires (4 hours tested), October 2013
- The Scientific Method for Fire and Explosion Investigation (4 hours tested), September 2013
- Investigating Motor Vehicle Fires (4 hours tested), July 2013
- The Impact of Ventilation in Building Structures on Fire Development (4 hours tested), March 2013
- Arc Mapping Basics (4 hours tested), August 2009