



Brent Fukuda, B.Sc. (Electrical Eng), CFEI

- 30 years as an electrical engineer and electrical/electronic technologist
- Highly experienced electrical and electronic failure analysis expert with extensive experience in electrically related fire investigations
- Hands-on analysis and repair experience on all types of industrial, commercial and residential equipment
- Extensive experience in electrical codes and related fire and building codes
- Certified Fire and Explosion Investigator

EDUCATION

Bachelor of Science (Electrical Engineering), University of Calgary **2006**
- concentration in circuit analysis and design

Industrial Electronics Technology – Southern Alberta Institute of Technology **1980**
- 2 year course, specializing in industrial control systems and RF communications

PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS

Association of Professional Engineers (APEGGA) – Member in Training, 2006

National Association of Fire Investigators (NAFI), 2009

Fire Investigator Association, Alberta, 2009

Canadian Association of Technical Accident Investigators and Reconstructionists, 2008

Illumination Engineering Society (IES), 2006

Canadian Wind Energy Association, 2006

WORK HISTORY

SAMAC Engineering Ltd. (Calgary) 2008 to Date

As SAMAC's electrical expert, I focus on failure analysis and product liability investigations of electrical equipment and components; electrically related fire investigations; vehicle fires; residential, commercial & industrial equipment failures; and code reviews. My expertise also includes mechanical equipment failures and the overall investigation of fire causation.

ATCO – Structures (Calgary) 2006 - 2008

Electrical Engineer (MIT)

ATCO supplies modular buildings to clients in more than 100 countries

- Provided leadership, troubleshooting, review and solutions for CEC / NEC / NBC / ABC / NFPA code issues to worldwide clients, including ESS, Akita Drilling, etc

- Technical support and troubleshooting of electrical issues and codes on more than 100 projects (camps, trailers, etc)
- Developed, designed and implemented an electrical wiring harness to reduce production costs
- Lead Unit Retrofit group with lead role in design and fire safety improvements
- Developed electrical sustainable resource solutions as part of ATCO Carbon Group
- Designed solar and wind power electric generation equipment

Eaton Electrical/Cutler Hammer Inc. (Calgary)

2004 & 2005

Student Electrical Engineer (2 summers)

Cutler Hammer is a major manufacturer of surge protection devices

- Developed Learning Management System (LMS) for mfg plant electricians
- Programmed (Java) web based server for power monitoring
- Assembled power monitoring equipment

Calgary Herald (Calgary)

1985 - 1996

Journeyman Electrical & Electronic Technician

- Responsible for all electrical and electronic equipment at the Calgary Herald, a daily newspaper with circulation up to 300,000/day
- Maintain and repair all building electrical services and electrical problems on all equipment, including printing presses (up to 600 volt applications)
- Build and repair mechanical equipment in machine shop
- Maintain and repair all computers as a certified MAC / Apple computer technician
- Design and multiplex computer systems
- Maintain and repair all cameras (full page and photographic), film processors, and industrial scanners

Independent Contractor – Part-time (Calgary)

1986 - 2005

Electrical & Electronic

- wiring of household renovations
- upgrading electrical systems to code
- licensed Motorola and Nokia technician: component level repair of cellphones; antenna systems, and vehicle & office installations
- installation and repair of commercial microwaves

Radio

- component level repair of amateur radio base stations, noise reductions
- antenna system design and installation for worldwide communications

Automobile

- repair and restore classic muscle cars

Renovation Contractor

- household renovations, building additions, decks, and fences
- included construction, plumbing, and HVAC as well as electrical

Photography

- specialized in black and white, colour film wedding portraiture, dog agility (trials action), and nature photography

Ahearn & Soper (Calgary)

1983 – 1985

Senior Electronic Service Technician

Firm was service provider for computer peripherals to commercial users

- Provided end user system and main frame support for high end Benson/Varian and Versatec electrostatic plotters (\$60000 to \$150000) used in seismic firms
- Customers included BP, Conoco Phillips, Dome and University of Calgary

Westronics Systems Ltd. / Datap Systems Ltd. (Calgary)

1980 - 1983

Electronic Technician / Troubleshooter / Design and Field repair

Sister firms manufacturing remote terminal units (RTU) used by the oil and gas industry for remote monitoring and control of oil and gas wells and facilities (SCADA - Supervisory Control and Data Acquisition)

- Build, test and final inspection of units to meet equipment specifications
- Setup monitoring systems on pipelines for Dome Petroleum, BP, etc
- Field service, maintenance and troubleshooting at remote sites in rural Alberta using customer field drawings and schematics

TEACHING

Electrical Instructor, EPIC, Calgary, 2009

As the electrical instructor on a 3 day in-depth course entitled Building Condition Assessment (see below under Training), I teach senior engineers how to assess the electrical condition of a buildings and the importance of not overlooking the condition and design of the electrical systems. The seminar explains how to perform a general condition survey of the building's electrical system safely and provides useful clues to reveal the condition of the system, including when an in-depth investigation should be performed.

TECHNICAL TRAINING

Building Condition Assessment, EPIC, Calgary, 2009

A 3 day course taken by senior city and consulting engineers across Canada to help them assess the condition of their buildings, particularly older ones where upgrades and additions have been or are going to be installed with existing aging structures and equipment. Attendees learn how to evaluate materials, conduct destructive or non-destructive tests, evaluate results, and decide on the actions necessary for rehabilitating the structures. This seminar includes step by step procedures for conducting condition surveys of concrete, steel, timber and masonry structures, equipment including HVAC, plumbing, electrical and fire safety systems and assessment of mold issues. (3 days)

Fire Dynamics & Understanding Post-Flashover Fire Patterns, Edmonton, 2009

A 2 day seminar to introduce and reinforce investigation protocols, techniques and principals of fire dynamics and post-flashover fire patterns.

National Fire, Arson & Explosion, Investigation Training, Denver, 2009

A 4 day course by internationally recognized lecturers on fire and explosion investigations experts focussing on proper investigative techniques as outlined in NFPA Fire Code 921, *Guide for Fire and Explosion Investigations*. The training program included a chapter-by-chapter study of the code. (4 days)

Computer Fire Modeling, Denver, 2009

Mathematical computer fire modeling is "*State-of-the-Art*" in fire investigation technology. The course taught the use of computer programs including Fire Dynamics Tools (FDTs), CFAST, and Fire Dynamics Simulator/Smokeview (FDS). (1 day)

CDR Operator and Analyst Course, Edmonton, 2008

A 5 day course in downloading and analyzing event data recorders from GM, Ford, and Chrysler vehicles using specialized equipment.

Firestop Systems (HILTI), 1 day, 2008

Fundamentals of Project Management (APEGGA), 2 days, 2007

Sustainable Resources – Wind , Solar Power (APEGGA), 2 days, 2007

Canadian Electrical Code (CEC) Essentials, Canadian Standards Association (CSA), 1 day, 2007

Alberta Building Code – Part 10 Relocatable Structures, 1 day, 2007

Canadian Electrical Code vs. U.S. National Electrical Code Comparison, CSA, 2 days, 2006

PERSONAL INTERESTS

- Electro-mechanical automobile systems troubleshooting, rebuilding and repair
- Volunteer with RCMP/Civilian Search Dog Association; assisted Calgary Director training new search dogs and handlers
- Volunteer with Border Collie Rescue, specializing in behavioural evaluations and special needs animals

June 2009