

Professional Summary:

Abhilash (Abi) Vijayan is a senior electrical engineer with over 18 years of experience in electrical system design and failure analysis. Abi is an expert in electrical systems for residential, commercial and industrial buildings, power generation facilities and large-scale energy projects. He is also a certified fire alarm inspector having conducted over 500 fire alarm and safety inspections in condominiums, high-rise buildings, schools, manufacturing facilities, arenas and stadiums. He has provided inspection, electrical design and failure analysis services for government organizations and multi-national engineering firms.

Abi also has strong expertise in solar power generation including design and construction of self-sustaining solar powered communities.

Abi skills in electrical failure analysis and root cause determination have proven him to be a solid and diverse resource that clients can depend on for accurate and practical solutions.

Expertise:**Building Systems**

Electrical design
HVAC
Telecommunication
Lighting

Renewable Energy

Solar Infrastructure
Solar power distribution
Product design & liability
Production analysis

Fire Alarm & Security

Commercial & residential
Control panels
Security systems

Electro-Mechanical

Pumping station design
System upgrades
MCC design
Refrigeration & chillers

Instrumentation

RTU & PLC integration
SCADA system
Instrument design
Instrument testing

Manufacturing

Electric components
Electrical failure analysis
Quality analysis
Risk assessment

Electrical Safety

Codes & standards
Safety assessments
Risk assessments

Education:

- B.Sc. in Electrical & Electronics Engineering, M.S University, India, 2004
- Technical Diploma in Electrical & Electronics, Technical Board of Tamil Nadu, India, 2000

Licenses & Certifications:

- Fire Alarm Technician - Canadian Fire Alarm Association (CFAA)
- CAD 2D & 3D design certification - Southern Alberta Institute of Technology (SAIT)
- Honeywell [Notifier] factory training - ONYX university
- Project Management Certificate - ECO Academy
- Mentoring Partnership Program - Bow Valley College & CRIEC

Project Experience:

Failure Analysis: Provide comprehensive examinations of electrical systems, vehicles, and machinery failures or fires to determine the origin and root cause of the failure and/or fire. These services also include complete file reviews and analysis of data to determine parties responsible for the loss.

Perform analysis of electrical systems to identify issues with designs or modifications in commercial, industrial and residential applications. Review reports from other experts to identify any omissions or inaccuracies.

Design Review: Provide electrical engineering design services to repair, replace or upgrade commercial and industrial electrical systems. Specialize in electrical system review to identify design requirements and cost valuation.

Provide analysis for voltage drop verification, electrical wire sizing, generator sizing and retrofitting, motor controls, switchgear, service entrance design and refit, and industrial solutions to power issues.

Project Management: Coordinate with various suppliers and contractors to manage design, installation and commissioning of electrical equipment for post-loss recovery and remediation.

Professional Experience:

- EFI Global | Langley, BC | Forensic Expert, 2023-Current
Failure analysis and fire O&C for electrical, fire alarm, instrumentations and Solar power projects.
- AES Engineering | Vancouver, BC | Electrical Designer, 2022-2023
Designed electrical, fire alarm, instrumentation and control networks for major projects.
- Viking Fire Protection Inc. | Burnaby, BC | Fire Alarm Designer, 2018-2022
Design, installation & testing of fire alarm, security, fire suppression, and sprinkler systems
- VFA-Accruent | Vancouver, BC | Electrical Assessor, 2017-2018
Conducted facility assessments and budget analysis on large scale projects.
- Group 4 Engineering Consultants | Calgary, BC | Electrical Designer, 2016-2017
Designed Electrical, Fire alarm and Streetlighting for various multi storied projects.
- Honeywell | Calgary, AB | Electrical Assembly Specialist, 2013-2015
Conducted design and production analysis on various products including gas detectors.
- ARCADIS | Dubai, UAE | Senior Electrical Engineer, 2011-2013
Designed major infrastructure, electrical and solar networks for large scale projects

- Parsons Corporation | Dubai, UAE | Electrical Consultant Engineer, 2005-2011
Designed electrical, instrumentation, telecom, and street lighting systems for major projects.

Project Examples:

Electrical Engineering

Numerous electrical assessments for major projects in Canada and USA. Conducted facility assessment surveys and value engineering, extended system life cycle and renewal cost savings. Prepared interior and exterior lighting schemes. Designed electrical and instrumentation layouts, P&ID and function drawings. Completed numerous building lighting and tunnel lighting design projects.

Forensic Engineering

Investigate property loss claims to determine cause of failure for electrical, industrial processes, complex electrical equipment, and product failures. Identify liability, repair options, loss valuations and provide loss prevention solutions.

Electro-Mechanical & HVAC

Multiple investigations to determine cause of failures in fire protection systems, HVAC, pumps and hydronics. Causes due to defective product, design, installation, maintenance, misuse and lifecycle overuse.

Fire Suppression

Numerous failures investigations in fire sprinkler systems and commercial kitchen fire suppression systems, fire protection control systems and fire alarm control panels.

Fire Alarm Failure & Testing

Conducted fire alarm and suppression system inspection and testing for over 500 projects. Prepared inspection and verification reports as per ULC 536, ULC 537 standards.

Fire & Smoke Damage

Completed fire alarm inspections, equipment fire damage and smoke contamination assessment of all electrical & HVAC equipment in hospitals, university, laboratory, broadcast studios, computer server rooms, commercial, food manufacturing, residential and industrial facilities. Specified restoration procedures.

Solar Power Generation

Provide electrical engineering consultancy services for numerous projects globally. Completed the first sustainable city project in Dubai with a 10 MW solar generating capacity, the first operational Net Zero Energy city serving as a World class example of luxury sustainable living.

Pumping Systems

Water supply and specialty systems in residential, condominiums, commercial, hospital, university, food/beverage, agricultural and industrial applications.

Sewage Treatment & Pumping stations

Plant design and risk assessment of sewerage treatment plant and more than 55 pumping stations including electrical, instrumentation and control systems upgrades.