

Nathan Zachreson | Forensic Electrical Engineer, P.E.

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Professional Summary:

Nathan has over two decades of electrical engineering design experience in the architectural, engineering, and construction industry. Nathan's design experience spans across municipalities, K-12, higher education, commercial, multifamily, clean room, semi-conductor fabrication, light industrial, and mission critical facilities and includes lighting and power and lightning design, code review and compliance, power system analysis, site adaptations and risk assessments, and project management.

- Working knowledge of NFPA 70 (NEC)
- Working knowledge of NFPA 70E, 72, 110, 111, 780, and 855
- Working knowledge of IECC, IBC, IFC, etc.

Licenses and Certifications:

P.E., Arizona State Board of Technical Registration, AZ, License #42801

P.E., California Board for Professional Engineers, Land Surveyors, and Geologists, CA, License #E23563

P.E., Colorado Division of Professions and Occupations, CO, License #PE.0062119

P.E., Florida Board of Professional Engineers, FL, License #82531

P.E., Idaho Board Of Licensure Of Professional Engineers And Professional Land Surveyors, ID, License #19717

P.E., Illinois Department of Financial and Professional Regulation, IL, License #062.075633

P.E., Massachusetts Board of Registrations of Professional Engineers and Land Surveyors, MA, License #55643

P.E., Minnesota Board of AELSLAGID, MN, License #52114

P.E., Mississippi Board of Licensure for Professional Engineers and Surveyors, MS, License #29798

P.E., Missouri Division of Professional Registration, MO, License #2018000010

P.E., Nevada Board of Professional Engineers and Land Surveyors, NV License #30920

P.E., New Mexico Board of Licensure for Professional Engineers and Professional Surveyors, NM License #28533

P.E., New York State Education Department – Office of the Professions, NY, License #102564

P.E., North Carolina Board of Examiners for Engineers and Surveyors, NC, License #50116

P.E., Tennessee Department of Commerce & Insurance, TN, License #121240

P.E., Texas Board of Professional Engineers and Land Surveyors, TX, License #129067

P.E., Utah Division of Professional Licensing, UT, License #13249335-2202

P.E., Wyoming Board of Professional Engineers and Professional Land Surveyors, WY, License #19805

Project Experience:

Undisclosed Clients – Lab Assessments

- Battery chargers
- RV wiring harnesses
- Electric bike battery failure

Undisclosed Clients – Site Examinations

- Unknown circuit breaker tripping cause
- Single fire sprinkler head discharge
- Arcing receptable
- High resistive electrical connections
- Nuisance tripping of GFCI device
- Dimming lights when either the refrigerator cycles on or when the printer prints
- Pool equipment sub-panel fire
- Electrical installation of an agricultural building
- Transformer secondary feeder replacement due to utility pole switch failure
- Computer, Server, and Security equipment loss evaluations

Professional Experience:

Energy Systems Design, Vice President, 2000 – 2019

AM Technical Solutions, Sr. Technical Staff, 2019 – 2021

kW Mission Critical Engineers, Sr. Associate, 2021 - 2022

Specialized Education:

Lithium-Ion Battery Energy System Storage: Connecting Building Codes, Design, Technology, and Fire Department Response, International Code Council's Global Membership Council, 2023

Professional Ethics for Mississippi, PDHengineer.com, 2022

Lightning Protection System Design, Hicks Lightning Protection, 2022

Caterpillar Technical Update, Caterpillar, 2022

Battery Fundamentals, EnerSys, 2022

Grounding and Bonding, EduCode, 2021

Electrical Safety and NFPA 70E, EduCode, 2021

TT: Capacitors & Harmonics, Eaton, 2020

Power Transformer Protection, PHD Library w/ CoC, 2020

SPD's, Current Systems, 2020

ABB GE Integration and New Technology, ABB, 2020

Transformers, Eaton, 2020

ABB Technical Tuesdays, ABB, 2020

IEC vs. ANSI LV/MV Circuit Breakers, ABB, 2020

Hitech DRUPS, Hitech, 2020
Ethics for Professional Engineers, EZ-pdh.com, 2019
Lighting Controls, West Intermatic, 2019
Architectural Lighting and Controls, Targetti Lighting & RCL, 2019
IR, SC, AFC, Selective Coordination; Apex Electrical Sales, 2019
Codes and Standards for Generators, Loftin Equipment, 2019
Mission Critical Power Distribution, Schneider Electric, 2019
UPS and Li-ion Batteries, Vertiv and BGA, 2019
UPS, Schneider Electric, 2019
Silicon Controlled Rectifiers (SCR), within UPS systems and Surge Protection Devices (SPD),
Multiple, 2008-2019

Education:

Bachelors of Science in Electrical Engineering, Arizona State University, Tempe, AZ, 2000

Affiliations:

Institute for Electrical and Electronics Engineers, IEEE, Since 2005

Courses Instructed/ Guest Lecturer:

Motors – Terminologies and design and code requirements
Grounding - Terminologies and design and code requirements