THE EXPERTS
Robson Forensic

KENNETH J. KUTCHEK, P.E., CFEI, CMSE
Electrical Engineering, Industrial Machinery, Workplace Safety

PROFESSIONAL EXPERIENCE

2015 to present **Robson Forensic, Inc.**
Associate
Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving design, construction, operation, maintenance and training of electrical systems, equipment and devices. Areas of expertise include:

Industrial Controls and Automation: electrical controls, hydraulics, pneumatics, manufacturing, assembly lines, warehousing, conveyors, robotics, automated storage and retrieval systems (ASRS), instrumentation, motion control, process control, heaters, ovens, presses, grinders, cutting, broaching, stamping presses, vision systems, motor controls, motion control, electrical control panels, PLC, HMI, MES, SCADA, data collection, alarming, digital devices, limit switches, proximity switches, photo-electric sensors, photo-eyes, ultrasonic sensors, level switches, flow switches, pressure switches, temperature switches, solenoid valves, relays, analog devices, transducers, level transmitters, flow transmitters, pressure transmitters, temperature transmitters, encoders, linear transducers, thermocouples, RTDs, AutoCAD, electrical drawings, piping and instrumentation diagram (P&ID), process flow diagrams (PFD), Bill of Materials (BOM), technical writing and training, operation manuals, user manuals, maintenance manuals, procedures and training.

Industrial Machine Safety: guarding, emergency stops, Lockout/Tagout, safety light curtains, safety mats, safety gates, safety area scanners, two hand controls, guard doors, safety relays, safety PLCs, safety interlocks, failsafe modes, warnings, instructions, training.

Electrical Power Distribution: switchgear, transformers, substations, power supplies, disconnects, fuses, circuit breakers, AC motors, DC motors, servo motors, motor controls, variable frequency drives (VFD), vector drives, motor starters, relays, contactors, uninterruptible power supplies (UPS), batteries, emergency generators, inverters, chargers, power factor correction, harmonics, connectors, splices, terminals, terminations, wiring, cables, receptacles, switches, GFCI, AFCI, bus bars, power distribution blocks, grounding, lightning protection, solar systems, metering, circuit breakers, conduit, distribution panels, electrical contracting, electrical installation, electrical maintenance, utility distribution, utility overhead power lines, utility underground power lines, utility overhead power line clearances, utility pole/circuit inspections, utility meters, and utility electric services.

Appliances/Equipment: furnaces, boilers, pumps, water heaters, ranges, stoves, dishwashers, refrigerators, space heaters, toasters, coffee pots, clothes washers, clothes dryers, dehumidifiers, dish washers, refrigerators, freezers, air conditioners, dehumidifiers, refrigeration compressors, garage doors, roll-up doors, lighting systems, metal halide lights, sodium lights, halogen lights, fluorescent light, LED lights, grow lights, computers, uninterruptible power supplies, emergency power systems, batteries, power tools, vape devices, e-cigarettes, lithium-ion batteries, lead acid batteries, AGM/Gel batteries, alkaline batteries, personal medical alert device systems, electronic medical device pump controls, solar systems, battery chargers, inverters and power strips.

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Industrial/Facilities/Construction Equipment: cranes, gantries, elevators, conveyors, turn tables, lifts, material handling, packaging, shipping docks, dock doors, dock levelers, dock locks, automatic roll-up doors, garage doors, automatic overhead doors, automatic sliding doors, automatic revolving doors, balers, compactors, palletizers, wrappers, scales, aerial lifts, boom lifts, scissor lifts, forklifts, pallet jacks, motors, speed control, HVAC systems, air conditioners, refrigeration, fans, pumps, blowers, compressors, and boilers.

Workplace Safety: Machine guarding, machine controls, lockout/tagout, interlocks, electrical safety, Personal Protective Equipment (PPE), emergency stops, safety light curtains, safety mats, safety gates, two hand control, work procedures, work instructions, hazard analysis, risk assessments.

Electric Shocks / Electrocutions: electrical shock injuries, arc flashes, electrical faults, static shocks, Ground Faults Circuit Interrupters (GFCI), Arc Fault Circuit Interrupters (AFCI).

Fires: Electrical causes of fires, failure analysis, fire alarm systems, smoke detectors, heat detectors, smoke alarms, carbon monoxide detectors, carbon monoxide alarms, gas detectors, lithium-ion batteries.

Project Management / Construction Management / Contracting: commercial contracts, agreements, request for quote (RFQ), proposals, purchase orders (PO), change orders, change requisition, addendums, bulletins, submittals, bid specifications, scope of work, functional specifications, factory acceptance test (FAT), site acceptance test (SAT), commissioning, verification, schedules, budgets, staffing, efficiency, utilization.

National Electrical Code, National Electrical Safety Code, Electrical Safety in the Workplace, OSHA Standards for General Industry, OSHA Electrical Safety Standards.

2015 to present **Dynamo Engineering**
President/Electrical Engineer/Consultant

- Electrical Engineering
- Industrial Controls and Automation Design and Development
- Industrial Machinery Safeguarding and Safety Risk Assessments
- Workplace Safety Assessments
- Project Management
- Industrial/Commercial Energy Conservation

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1997 to 2015 **Patti Engineering**

Vice President of Operations 2002-2015

- Industrial automation, control systems, machine control, process control, manufacturing automation, process control, industrial controls, project management, software development (PLC, SCADA, HMI, MES, DCS), electrical controls design, equipment installations, upgrades, power distribution, robotics, motion control, conveyor systems, assembly lines, warehousing, vision systems, RF Radios, RFID, barcode, control panel design build, machine safety, AC/DC/servo drives, CNC, pneumatics, hydraulics, alarming, data collection, data reporting, vision inspection systems, material handling, warehousing, ASRS across various industries: automotive, food, beverage, water, waste water, chemicals, manufacturing, distribution, warehousing, aggregates, etc.
- Managed all electrical controls automation projects (hardware design, software development, machine safeguarding, startups, service calls, warranty work)
- Managed project schedules, budgets and change orders
- Developed / maintained company procedures, methodologies and documentation
- Managed Engineering, HR, Accounting, Safety departments
- Recruiting, training, evaluations of engineers
- Managed CSIA Certification, UL certification
- Managed vendor partnerships
- Managed subcontractors - developed RFQ and negotiated contracts
- Forensic Engineering, Expert Witness

Senior Electrical Controls Engineer 1997-2002

- Lead Engineer and Project Manager on electrical controls automation projects
- Managed project schedules, budgets, specifications, contracts and change orders
- Electrical control panel design in AutoCAD
- PLC / HMI / GUI / SCADA software programming
- Machine safeguarding, Lockout, safety controls
- Onsite start-up, commissioning and troubleshooting
- Developed operation and maintenance manuals
- Trained customers on system operation and maintenance

1994 to 1997 **Power Saving Systems**

President/Electrical Engineer (self employed)

- Performed industrial/commercial energy audits, analyzed electric and gas consumption
- Engineered energy and cost saving solutions, lighting upgrades, power factor correction, peak demand billing, equipment utilization
- Managed project installations, start-up and testing

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1988 to 1994 **DuPont**

Product Development Engineer, Wilmington, DE 1993-1994

- Developed and commercialized a fully automated biochemical instrument which detects and identifies bacteria in food
- Optimized equipment and process parameters thru testing and statistical analysis
- Provided onsite technical support to customers
- Liaison between R+D, manufacturing and sales
- Developed documentation for instrument installation, operation and maintenance
- Trained customers on instrument installation, operation and maintenance

Corporate Engineering Recruiter, Wilmington, DE 1992-1993

- Interviewed, evaluated and selected BS, MS and PhD engineering candidates in all disciplines (electrical, mechanical, chemical, biological, and environmental) for placement throughout the corporation.
- Managed and coordinated recruiting visits to numerous universities

Project Engineer, Manufacturing Supervisor, Poughkeepsie NY/Danbury CT 1990-1992

- Installed, started-up, operated and maintained an automated robotic manufacturing cell in a class 1 clean room producing pellicles for the electronics industry
- Installed, started-up, operated a vacuum forming operation for pellicle packaging
- Optimized equipment and process to improve product quality and efficiency
- Hired, trained, supervised all operators/technicians
- Managed production, QA, maintenance, scheduling, and raw material inventory
- Developed all documentation for operation, maintenance and troubleshooting

Process Engineer – Tyvek Manufacturing, Richmond VA 1988-1990

- Increased process efficiency by improving yield, thru-put, and reliability
- Optimized process parameters to improve product quality and yield
- Assisted in the operation and development of the Honeywell TDC3000 Distributed Control System (DCS)
- Assisted R+D and Marketing to develop new products

1986 to 1987 **Wisconsin Electric**, Milwaukee, WI

Distribution Engineering Technician (Co-op Student)

- Inspected, planned, designed residential electrical services (overhead and underground)
- Inspected, verified, inventoried electrical distribution equipment (poles, transformers, etc)
- Updated electrical distribution layout drawings
- Inspected overhead distribution lines
- Inspected electrical distribution poles

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PROFESSIONAL CREDENTIALS

Professional Engineer: NCEES, Arizona, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin
Certified Fire and Explosion Investigator (CFEI)
Certified Machine Safety Expert (CMSE)
American Boat Yacht Council (ABYC) – Marine Electrical Certification (Dec 2015)

EDUCATION

Bachelor of Science, Electrical Engineering
Illinois Institute of Technology, Chicago, Illinois, 1988
MBA courses: Accounting, Economics, Finance, Operations Management, Statistics, Marketing
University of Delaware, 1992-1994
Marist University, 1990-1992
University of Richmond, 1988-1990

Training:
Certified Machine Safety Expert (CMSE)
Certified Fire and Explosion Investigator (CFEI)
NFPA70 – National Electric Code (NEC)
NFPA70E - Electrical Safety in the Workplace
National Electrical Safety Code (NESC)
UL508A – Standard for Industrial Control panels
OSHA 30 Hour Construction
OSHA 30 Hour General Industry
OSHA approved Stand-Up Forklift Operation and Safety Certification
OSHA approved Sit Down Forklift Operation and Safety Certification
OSHA approved Aerial Lift Operation and Safety Certification

Continuing Education:
NAFI - Fire Investigation Training Program 4 day, 2026
National Electrical Safety Code, (NESC), 2026
NFPA 70E - Electrical Safety in the Workplace, 2026
OSHA 30 Hour - General Industry, 2025
OSHA 30 Hour - Construction, 2025
Technical Investigations of Solar Projects, 2025
Forensic Engineering - Investigating Solar Fires, 2025
Forensic Engineering - Non-Destructive Evaluation Techniques, 2025
Forensic Engineering - Analysis of a Modular Fireplace Fire, 2025
Forensic Engineering - Lithium-Ion Battery Explosions, 2025
Forensic Engineering - Insurance Industry, 2024
Forensic Engineering - Engineering Contracts 2024
Forensic Engineering - Fire Caused by an Open Neutral, 2024

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Forensic Engineering - Photogrammetry/Laser Scanning, 2024
Forensic Engineering - Beyond the Building Code: Construction Defect Evaluation, 2024
Forensic Engineering - Property Casualty Losses, 2024
National Electric Code – 2020 NEC, 2023
National Electric Code – 2017 NEC, 2023
NFPA 70E - Electrical Safety in the Workplace, 2022
Electrical Power Distribution and Utilization, 2022
Stand-Up Forklift Certification Training, 2022
Sit Down Forklift Certification Training, 2022
Boom Lift Certification Training, 2022
Daubert 201 – Beyond the Standard, 2022
Forensic Inspection of Automotive Braking Systems, 2022
Self-loosening Sediment Traps Resulting in Gas Explosions NFPA 101 - Life Safety Code, 2021
Winds of Changes - Electric Transmission, 2021
Certified Machine Safety Expert Training, 2020
Machine Safeguarding and Functional Safety Training, 2020
Explosion Dynamics, 2020
Investigating Natural Gas Systems, 2020
OSHA 30 Hour Construction, 2020
Aerial Lift Operation, 2020
NAFI - Fire Investigation Training Program 4 day, 2020
OSHA Machine Safeguarding, 2019
OSHA Hazard Control, 2019
Ethics: PE as an Expert Witness, 2019
Prevention Through Design, 2019
Hurricane Response: Restoring Power to Puerto Rico, 2019
NFPA 72 - Fire Alarm Code, 2019
Insurance Fundamentals for Forensic Engineers, 2019
Schedule Delay Claims with Forensic Analysis, 2019
Electrocutions and Downed Power Lines, 2019
Arc Mapping, 2019
Forensic Engineering - Fires from Reflected Sunlight from Glass Windows, 2019
Forensic Engineering - Arc Mapping in a Residential Kitchen Fire, 2019
Forensic Engineering - Pinched Power Cord Causing Fire, 2019
Fire Alarm and Detection Systems, 2019
Fire Protection Systems, 2018
Electric Power Distribution Systems, 2018
Battery & Other Electricity Storage Technologies, 2018
Interior Electrical Distribution Systems, 2018
Electric Power Requirements for Buildings, 2018
Electrical Distribution Systems, 2018
Control Methods of AC Induction Motors, 2018
Design Professionals Contract Review, 2018
Advanced Fire Investigation for Professional Engineers, 2018
Fire due to Intentional Deviation from Design, 2018
Forensic Engineering - Fire and Overfilled Propane Cylinder, 2018
Forensic Engineering - Hot Socket Problems in Electrical Meters, 2018
Forensic Engineering - Cloned Ignition Coil Pack, 2018
Forensic Engineering - Furnace Oil Supply Line Fitting Leak, 2018

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Forensic Engineering - Residential and Commercial Chairs, 2018
Forensic Engineering - Misuse of Pressure Vessel Codes, 2018
Forensic Engineering - Solar Insolation Parameters, 2018
Aerial-Scissor Lift Certification Training 2017
Pallet Jack Electric Certification Training 2017
Sit-Down Forklift Certification Training 2017
Autonomous Vehicles: Who's in the Driver's Seat? 2017
Fire Investigation - Electrical Arc Mapping, 2017
Residential Natural Gas Systems, 2017
Residential Electrical Systems, 2017
OSHA General Industry - 30 Hour, 2017
Gas and Electric Appliance Fires, 2017
Reliability of Continuous Power Systems in Industrial Commercial Facilities, 2017
LED Street Lighting, 2017
AC vs DC: Resurrection of Westinghouse and Edison Debate, 2017
Residential Building Construction, 2016
New Battery Technologies, 2016
Understanding Fire through the Candle Experiments, 2016
Fire Investigator - Scene Safety, 2016
Fire and Arson Investigator Academy, 2016
Fire Investigator - Scientific Method, 2016
Marine Electrical Training and Certification, 2015
Electric Shock Drowning, 2015
NFPA 70E - Electrical Safety in the Workplace, 2015
NFPA 70 - National Electric Code, 2015
Electric Power Substations, 2015
Electric Power Generation, 2015
Electric Power Transmission and Distribution, 2015
Chemistry of Fire, 2015
Fire Investigators 10 Most Common Errors, 2015
Fire Investigators Report Writing, 2015
Expert Witness Daubert Challenge, 2015
Conduct Effective Meetings, 2013
Federal Contracting Laws, 2013
Project Scheduling, 2013
Project Management, 2012

PROFESSIONAL MEMBERSHIPS

National Academy of Forensic Engineers (NAFE)
National Society of Professional Engineers (NSPE)
Michigan Society of Professional Engineers (MSPE)
National Fire Protection Association (NFPA)
Nation Association Fire Investigators (NAFI)
American Association of Safety Engineers (ASSE)
Institute of Electrical and Electronics Engineers (IEEE)
Underwriters Laboratories Standards Technical Panel 2011 – Industrial Machinery

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Underwriters Laboratories Standards Technical Panel 60947 - Industrial Control Equipment, Low-Voltage Switchgear and Controlgear, Contactors and Motor Starters
Underwriters Laboratories Standards Technical Panel 61496 - Safety Light Curtains
Underwriters Laboratories Standards Technical Panel 60730D - Timer Controls
Underwriters Laboratories Standards Technical Panel 60730E - Appliance Controls
Underwriters Laboratories Standards Technical Panel 1998 - Software in Programmable Components
Underwriters Laboratories Standards Technical Panel 1026 - Electric Cooking Appliances
Underwriters Laboratories Standards Technical Panel 2157 - Electric Clothes Washers and Dryers

PUBLICATIONS AND PRESENTATIONS

Siemens Automation Summit – Users Technical Conference presentation, Time to Market - Engine Assembly Build during Production, June 2014
Indusoft webinar presentation, System Integrator Best Practices Webinar, March 2013
Control System Integrators Association – Annual Conference presentation, Top 5 Secrets to Passing the CSIA Registration Audit, April 2003

OTHER EXPERIENCE

Boating (inland water): Recreational boating, PWC's (sit-down and stand-up), kayaks and canoes, including maintenance, modifications, repairs, rebuilding. Boating safety navigation rules/laws. Completed Safety Certification training
Snowmobiling: Recreational snowmobiling, including maintenance, repairs, rebuilding. Snowmobiling rules/laws. Completed Safety Certification training
Automobiles classic/historic: maintenance, modifications, repairs, rebuilding
Home Remodeling: Completely restored/remodeled a 95 year home - electrical, plumbing, mechanical, framing, stairs, cabinetry, roofing, siding, decking
Sports and activities: swimming, biking, running, triathlons, boating, canoeing, kayaking

VOLUNTEER ACTIVITIES

First Robotics: Mentor/Coach for High School robotics team. Robot Inspector, 2010-2015
Christmas in Action: home renovation projects for the elderly, 2005-present
Meals on Wheels: deliver meals to the elderly, 2002-present
Boy Scouts of America: Assistant Scoutmaster, Eagle Scout Advisor, Treasurer, 2000-2014
Habitat for Humanity: home building – framing, roofing, siding, drywall, trim, cabinetry, painting, electrical, plumbing, managed electrical, mechanical, plumbing, and foundation contractors, 1994-2004
Science Olympiad: Elementary School Charged Up (electricity) event supervisor 2019-present

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