

# CURRICULUM VITAE

THOMAS H. BURTNESSE, PE, BSEE, CFEI



## Tom Burtneess

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## AREAS OF EXPERTISE – ELECTRICAL AND LIGHTING ENGINEERING – FORMER LICENSED ELECTRICIAN

- ✓ Lighting and Electrical Accidents and Injury – Commercial, Industrial, Roadway, Vehicular
- ✓ Illumination Engineering – Roadway, Street, Parking Lot, Area Lighting
- ✓ Photometric Site Assessments and Illumination Requirements
- ✓ Lighting Fixture Accidents, Injuries, and Design Issues
- ✓ Electrocution and Arc Flash (NFPA 70E)
- ✓ Electrical Power, Controls, and Instrumentation (SCADA)
- ✓ Electrical Equipment and Machinery Installations – Accidents, Injury, and Failures
- ✓ Certified Fire & Explosion Investigator – Fire and Explosion Origin & Cause Investigations
- ✓ Electrical Construction Defects and Contract Disputes

## PROFESSIONAL QUALIFICATIONS

**EDUCATION** University of Illinois at Urbana - Champaign,  
Bachelor of Science in Electrical Engineering, 1976

### **FORMER LICENSED ELECTRICIAN AND ELECTRICAL CONTRACTOR**

### **ACTIVE PROFESSIONAL ENGINEER REGISTRATIONS**

Illinois, 1983, License No. 062.040946	Missouri, License No. 2017007693
Alabama License No. 35831	Nevada, License No. 025345
Arkansas, License No. 20619	New Mexico, License No. 25870
Connecticut, License No. 32153	New York, License No. 96955
Florida, License No. 76442	North Carolina, License No. 050313
Georgia, License No. PE045508	Pennsylvania, License No. PE090862
Hawaii, License No. PE-19077	South Carolina, License No. 40596
Indiana, License No. PE11600219	Tennessee, License No. 119899
Kansas, License No. 27393	Texas, License No. 122891
Louisiana, License No. 40711	Washington State, License No. 50766
Massachusetts, License No. 48045	West Virginia, License No. 24010
Michigan, License No. 6201064956	Wisconsin, License No. 40389-006

Serving in AZ, CA, and IA as an Expert Witness under those specific State Laws and Rules

<b>CERTIFICATIONS</b>	<p>Certified Fire and Explosion Investigator (CFEI), by the National Association of Fire Investigators (NAFI) Fire Investigation Certificate, Investigative Engineers Assoc. Advanced Fire Investigation Certificate, Investigative Eng'rs. Assoc. UL 1598 Manufacturer's Technical Representative (MTR) Certification OSHA 511 Certificate, OSHA Training Institute NFPA 70E Certificate, NFPA Plumbing Design Certificate, University of Wisconsin Madison</p>
<b>TRADE QUALIFICATION</b>	Licensed Electrician, Urbana Illinois, 1976 – 2004
<b>EXPERT WITNESS</b>	I first served as an insurance investigator and consultant in 1978, as a forensic engineer in 1983, and as an expert witness in 1991.
<b>PROFESSIONAL MEMBERSHIPS</b>	<p>Illuminating Engineering Society (IES) IES Street and Area Lighting Committee IES Central Illinois Section, Board Manager, 2014-2015 Institute of Electrical and Electronics Engineers – IEEE National Association of Fire Investigators – NAFI National Fire Protection Association – NFPA American Society of Mechanical Engineers (ASME) Eta Kappa Nu, Electrical Engineering Honors Society, Inducted 1975 National Council of Examiners for Engineering &amp; Surveying – NCEES</p>
<b>PROFESSIONAL AWARDS</b>	Consulting Engineers Council of Illinois, Engineering Excellence Honor Award, Healey Street Detention Basin, 1999, Champaign, IL

## **PROFESSIONAL EXPERIENCE**

<b>EMPLOYMENT HISTORY</b>	<p><u>1984 to Present:</u> <b>Burtness Engineering Services</b> As the Owner and Chief Engineer of this Lighting and Mechanical-Electrical-Plumbing consulting engineering firm, I have been in responsible charge of all aspects of the firm's professional engineering and administrative operations.</p> <p><u>1981 to 1984:</u> <b>Sandhu, Dennis &amp; Assoc., P.C.</b> As Senior Project Engineer, I served in responsible charge of the technical aspects of all electrical power, control, lighting, and instrumentation projects; as well as all HVAC, plumbing, and forensic engineering projects. I also managed the technical and financial aspects of the firm's engineering staff, including budgeting, personnel, billing, marketing, and client development.</p> <p><u>1974 to 1981:</u> <b>Burtness Electrical Contracting, Inc.</b> I served as President and Licensed Electrician for this electrical and general contracting firm that specialized in multi-family housing, churches, commercial establishments and light to medium industrial work.</p> <p><u>1973 to 1974:</u> <b>J.R. Russell Electric</b> Electrician apprentice. Manufactured Tiffany-style light fixtures.</p>
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## **SPEAKING ENGAGEMENTS**

"Help! I've Been Asked to be an Expert Witness!" Seminar Speaker, LightFair International, May 9, 2018; Chicago, Illinois.

"Dealing with Difficult Attorneys." Invited Speaker, 27<sup>th</sup> Annual National Expert Witness Conference, SEAK Experts, May 6, 2018.

"Managing the Differences Between Investigative Engineering and Expert Witnessing." Invited Speaker, Investigative Engineers Association 2018 Annual Convention, March 5, 2018, Fort Lauderdale, Florida.

"Help! I've Been Called as an Expert Witness!" Illuminating Engineering Society, 2017 IES Annual Street and Area Lighting Conference (SALC), September 13, 2017; Austin, Texas.

Illuminating Engineering Society, taught "Fundamentals of Lighting Intensive Course," Module 10, "Lighting for Exteriors," October 28, 2016, Bloomington, Illinois.

Illuminating Engineering Society, taught "Fundamentals of Lighting Intensive Course," Module 2, "Electric Light Sources and Auxiliary Devices," October 27, 2016, Bloomington, Illinois.

Illuminating Engineering Society, taught "Fundamentals of Lighting Intensive Course," Module 1, "History of Lighting, Professional Practice, Physics and Vision," October 27, 2016, Bloomington, Illinois.

"Automate Your Forensic Engineering Marketing Funnel using a CRM." Conference Presentation, Investigative Engineers Association 2016 Annual Convention, October 10, 2016, Atlanta, Georgia.

"University of Illinois Campustown – Economic Development Benefits of Street Lighting Design." IES – Central Illinois Section Presentation, March 11, 2015, Champaign, Illinois.

"Maximize Your Savings! Strategies to Economically Justify Your LED Lighting Installations." Conference Presentation, LED Specifier Summit, October 21, 2014, Chicago, Illinois.

"Navigating the Inevitable Adoption of LED Streetlights." 100<sup>th</sup> Annual Illinois Transportation and Highway Engineering Conference Presentation, March 25, 2014, University of Illinois, Champaign, Illinois.

"LED's, Plasma, Induction, Oh My! Emerging Technologies in Street and Area Lighting." American Public Works Association, Illinois Chapter 2010 Conference Presentation, May 6, 2010, Peoria, Illinois.

"Are LED Streetlights Ready For Prime Time?" Presentation to the American Public Works Association, Prairie Branch, June 18, 2010, Decatur, Illinois.

"Are LED Streetlights Ready For Prime Time?" Presentation to the American Public Works Association, Champaign Branch, February 15, 2008, Champaign, Illinois.

"Control System Automation for Water Treatment Plants." Hydraulic Engineers Luncheon Presentation, Sept 16, 1998, Champaign, IL.

Numerous Formal Presentations to City Councils and at Public Meetings.

## **FUN FACT**

I was a member of the leadership team for the 1972 University of Illinois Urban Vehicle Design Competition Team which developed the first-ever working prototype of a hybrid electric car, now common in production models such as the Toyota Prius. I served as the Mechanical Coordinator responsible for the physical assembly of the hybrid electric car. Our prototype hybrid was displayed at the Museum of Science and Industry in Chicago, Illinois in 1972-1973.

## **EXPERT WITNESS QUALIFICATIONS**

My value as an expert witness comes from over 40 years of real world experience with the design, selection and specification, code and standard conformance and compliance, installation, system integration, equipment startup, troubleshooting, and failure analysis of electrical power, illumination, control & instrumentation systems (SCADA) and industrial equipment and machinery.

As a licensed electrician for many years, and then as a consulting engineer, I have specified and/or installed thousands of electrical, illumination, and instrumentation & controls (SCADA) equipment installations in residential, commercial, industrial, municipal, and utility occupancies.

This depth of real world experience has served as a practical foundation for the numerous forensic investigations I have conducted, and for site analysis of equipment installations, accidents, injuries, failures, and fires.

In addition, I am a seasoned technical and contract writer, having written hundreds of construction contracts and specifications, as well as numerous investigative reports, master plans, Operation and Maintenance Manuals, as well as forensic and expert witness reports.

One of my significant strengths is in the investigative process. I am detailed and thorough, enabling me to unearth both technical and documentation facts of the case, thus assisting me in identifying the chain of causation.

## **PROFESSIONAL EXPERIENCE**

My core technical experience in the built environment includes electrical power and distribution (including Medium and High Voltage); lighting and illumination engineering; and control, instrumentation, SCADA, and HMI (Human-Machine Interface) systems. I have designed over 300 water and sewer treatment facilities, each with dozens to hundreds of pieces of equipment, all needing power and control systems. Additional technical experience includes residential and commercial plumbing, heating, ventilating, air conditioning; and mechanical engineering and construction.

My experience includes expert witness and forensic services including both litigation and insurance investigation services.

My construction industry engineering experience is in all aspects of engineering, contract preparation, and project management in the design-build construction process and I have been responsible for: RFP and RFQ (Tender) preparation and response; proposal and contract preparation; establishment of pre-design criteria and project requirements; conducting stakeholder collaborative needs assessment workshops; site/field surveys and studies; preliminary design

studies; alternative solution analyses; code compliance investigations; inter-disciplinary coordination; neighborhood citizen committee interaction and liaison; design, contract document and specification preparation; material quantity takeoffs (Bills of Material – BOM) / Bills of Quantity – BOQ) / Summaries of Quantity – SOQ); Opinions of Probable Construction Costs (OPC); analysis and verification of cost estimates, billings, and applications for payment; life-cycle cost analyses; value engineering; contract management and administration; system integration; construction scheduling and sequencing; on-site construction observation and conflict resolution; shop drawing review; initiating and processing client purchase orders; long term purchase agreements; operation and maintenance manual preparation; start-up assistance, testing, calibration, troubleshooting, adjustment, maintenance; as well as energy conservation surveys.

As a member of the Illuminating Engineering Society's Street and Area Lighting Committee, I have completed dozens of illumination engineering projects, particularly in the area of outdoor municipal street and parking area lighting. One of my specialty areas involves central business district streetscape lighting installations that have proven to be a critical element for economic revitalization.

I am experienced in the field of industrial instrumentation and control systems, and as the designer and/or system integrator, I have completed numerous municipal and industrial projects involving flow, level, pressure, pH, temperature (and similar parameters), instrumentation, multi-loop control, PLC based control, SCADA, and HMI operator interface computer based systems.

I am experienced in the design of residential and commercial plumbing and HVAC systems. For example, while working as Chief Engineer for construction administration of a major renovation project for a 6 story genetic engineering laboratory at the University of Illinois, Chicago campus, my work involved observing the installation, coordination, testing, balancing, calibration and adjustment of control components and systems for proper operation and energy conservation in several HVAC systems, including VAV, multi-zone, and HEPA filtration systems on laboratory hazardous vent hoods.

I have written many in-depth reports, including forensic reports, municipal master planning documents, and study reports; as well as operation, maintenance, and testing manuals.

I have experience in working with a wide variety of clientele including numerous architectural and engineering firms; governmental authorities, municipalities; consulting firms; attorneys; insurance companies; individuals; homeowners; small business owners; light, medium, and heavy industrial firms; utilities; the U.S. Environmental Protection Agency; the U.S. Army; the U.S. Air Force; the US Farmer's Home Administration; the State of Illinois Capital Development Board; and the Army Corps of Engineers. I have worked cooperatively with numerous utility companies as well as local, county, state and federal authorities.

## **CONTINUING EDUCATION COURSES TAKEN SINCE 2006**

Engineering Project Management (20 PDH), University of Wisconsin, June 2006  
Computer Aided Exterior Lighting Design (6 PDH), Illuminating Engineering Society, Sept 2007  
IES Street and Area Lighting Courses (16 PDH), Illuminating Engineering Society, Sept 2007  
LED Lighting Course (6.5 PDH), Illuminating Engineering Society, Sept 2009  
IES Street and Area Lighting Courses (17 PDH), Illuminating Engineering Society, Sept 2009  
Risk Drivers Loss Prevention & Risk Management (2 PDH), XL Insurance, Nov 2010  
Mergers & Acquisitions for Engineering Firms (14 PDH), PSMJ Resources, Sept 2011  
IES Street and Area Lighting Courses (16 PDH), Illuminating Engineering Society, Sept 2012  
Outdoor Lighting Controls (4 PDH), Illuminating Engineering Society, Sept 2012  
IES Street and Area Lighting Courses (16 PDH), Illuminating Engineering Society, Sept 2013  
Computer Aided Exterior Lighting Design (6 PDH), Illuminating Engineering Society, Sept 2013  
LED Reality Check, LED Specifier Summit (1 PDH), Nov 2013  
Lighting Commissioning, LED Specifier Summit (1 PDH), Nov 2013  
Successful Expert Witness Practice (14 PDH), SEAK, Inc., April 2014  
National Expert Witness Conference (13 PDH), SEAK, Inc., April 2014  
IES Street and Area Lighting Courses (16 PDH), Illuminating Engineering Society, Sept 2014  
Outdoor Lighting Controls (6 PDH), Illuminating Engineering Society, Sept 2014  
Existing Buildings & LED Upgrades (1 PDH), LED Specifier Summit, Oct 2014  
Applying Lighting for Visual Performance (1 PDH), LED Specifier Summit, Oct 2014  
The LED Revolution is Over (1 PDH), LED Specifier Summit, Oct 2014  
LED Lighting and Controls, LED Specifier Summit (1 PDH), Oct 2014  
Laws, Rules & Ethics for Florida PE's (4 PDH), Ezekiel Enterprises, Feb 2015  
Law for Experts (14 PDH), SEAK, Inc., April 2015  
National Expert Witness Conference (14 PDH), SEAK, Inc., April 2015  
Fire Investigation Certificate (8 PDH), Investigative Engineers Association, May 2015  
Forensic Engineering Training (19 PDH), Investigative Engineers Association, May 2015  
Forensic Engineering Convention (21.25 PDH), Investigative Engineers Association, Oct 2015  
Midwest Regional Expert Witness Workshop (7.5 PDH), Forensic Expert Witness Assoc, Dec 2015  
Advanced Trial Skills Workshop for Expert Witnesses (14 PDH), SEAK, Inc., May 2016  
National Expert Witness Conference (14 PDH), SEAK, Inc., May 2016  
IES Street and Area Lighting Courses (18.75 PDH), Illuminating Engineering Society, Sept 2016  
Advanced Fire Investigation (8 PDH), Investigative Engineers Association, October 2016  
Forensic Engineering Training (8 PDH), Investigative Engineers Association, October 2016  
Traffic Accident Reconstruction (8 PDH), Investigative Engineers Association, October 2016  
Florida Laws & Rules for Professional Engineers (1 PDH), February 2017  
OSHA 511, Standards for General Industry, (26 PDH), March 2017  
How to Write a Bulletproof Expert Witness Report (14 PDH), SEAK, Inc., May 2017  
National Expert Witness Conference (14 PDH), SEAK, Inc., May 2017  
Texas Professional Board – Practice Ethics Update (1 PDH), June 2017  
IES Street and Area Lighting Courses (18.5 PDH), Illuminating Engineering Society, Sept 2017  
Forensic Engineering Convention (4 PDH), Investigative Engineers Association, March 2018  
Engineering Ethics (1 PDH), Investigative Engineers Association, March 2018  
Indiana Statutes, Rules, and Ethics for Professional Engineers (3 PDH), April 19, 2018  
Advanced Testifying Skills for Experts (14 PDH), SEAK, Inc., May 3-4, 2018  
27<sup>th</sup> Annual National Expert Witness Conference (14 PDH), SEAK, Inc., May 5-6, 2018  
NFPA 70E – Electrical Safety in the Workplace (14 PDH), NFPA, September 20-21, 2018  
IES Street and Area Lighting Courses (15 PDH), Illuminating Engineering Society, Oct 2018  
Alabama Ethics for Professional Engineers (1 PDH), November 8, 2018

## **CONTINUING EDUCATION COURSES TAKEN SINCE 2006 (CONT'D)**

Florida Ethics for Professional Engineers (1 PDH), December 2018  
Florida Laws & Rules for Professional Engineers (1 PDH), December 14, 2018  
28<sup>th</sup> Annual National Expert Witness Conference (14 PDH), SEAK, Inc., April 27-28, 2019  
Alabama Ethics for Professional Engineers (1 PDH), July 24, 2019  
National Electrical Code 2020 Code Change Conference (16 PDH), EC&M, Mike Holt, Oct 2019  
Professional Engineering Ethics (1 PDH), Texas Board of PEs, March 4, 2020  
International Fire, Arson & Explosion Investigation Training Program (28 PDH), NAFI, March 2020  
Indiana Statutes, Rules, and Ethics for Professional Engineers (3 PDH), May 10, 2020  
UL 1598 Manufacturer's Technical Representative (MTR) Certification Training (4 PDH), July 2020  
IES Street and Area Lighting Courses (13 PDH), Illuminating Engineering Society, Oct 2020  
Applied Ethics Roundtable (2 PDH), New Mexico Board of PE Licensure, Nov 24, 2020  
Florida Laws & Rules for Professional Engineers (1 PDH), Jan 29, 2021  
It Is a Matter of Ethics (2 PDH), AXA-XL, June 17, 2021  
IES Street and Area Lighting Courses (11.5 PDH), Illuminating Engineering Society, Oct 2021  
Contract Management: Risk Allocation by Design (2 PDH), AXA-XL, Oct 21, 2021  
Applied Ethics Roundtable Session B (2 PDH), New Mexico Board of PE Licensure, Dec 2021  
29<sup>th</sup> Annual National Expert Witness Conference (14 PDH), SEAK, Inc., April 23-24, 2022  
Indiana Statutes, Rules, and Ethics for Professional Engineers (3 PDH), July 29, 2022  
IES Street and Area Lighting Courses (14 PDH), Illuminating Engineering Society, Oct 10-13, 2022  
Nevada Statutes and Administrative Code (1 PDH), November 14, 2022  
Applied Ethics Roundtable (2 PDH), New Mexico Board of PE Licensure, Nov 18, 2022  
Illinois Design Profession State Statutes and Rules (.25 PDH), Jan 11, 2023  
Florida Laws & Rules for Professional Engineers (1 PDH), Jan 17, 2023  
30<sup>th</sup> Annual National Expert Witness Conference (14 PDH), SEAK, Inc., May 6-7, 2023



## **FORENSIC AND EXPERT WITNESS ENGAGEMENTS**

Key: P = Plaintiff. D = Defense. IE = As Investigative Engineer.

### **Examples of Investigative Engineering Pre-Litigation Investigations**

Armstrong Lumber Company Electrical Panel Failure, Urbana, IL – 1978 (IE)  
Kraft/Humko Food Mfr Corp – Coffee Creamer Packaging Line Safety Seal Failure – 1983 (IE)  
Residential Fire due to Improper NG to LP Gas Conversion – 1984 (IE)  
Crescent City Grain Bin Fire – Crescent City, Illinois – 1984 (IE)  
Dial Soap Manufacturing Corp – Steam Boiler Internal Vessel Damage (IE)  
University of Illinois Abbott Power Station – Sulphur Scrubber Failure – 1987 (IE)  
Danville Single Family Residence – Utility Transformer Induced Fire (IE)  
Gray Chiropractic Clinic X-Ray Machine Failure – Lightning Damage – 1991 (IE)  
Tuscola Video Store Fire – Tuscola, Illinois – 1991 (IE)  
Quick Single Family Residence Fire – Villa Grove, Illinois – 1992 (IE)  
Residential Fire due to Defective Furnace Oil Burner Controller – 1992 (IE)  
Joines Well Pump Branch Circuit Failure, Hindsboro, Illinois – 1993 (IE)  
Sisk Supermarket Electrical Service Fire – Arcola, Illinois – 1993 (IE)  
Recontek Waste Recycling Scrubber Failures – Newman, Illinois – 1994 (IE)  
Hoopeston Sewer Plant Flooding, Hoopeston, IL – 1994 (IE)  
Plastipak Inc. Injection Molding Factory, 15KV Distribution Equipment Explosion – 1995 (IE)  
Getz Single Family Residence Intermittent Power Failure – Urbana, Illinois – 1996 (IE)  
Campbell Residence Electrical Fire and Primary Cable Explosion Urbana, IL – 1996 (IE)  
Stockland Grain Elevator – Grain Silo Distribution Panel Fire – 1997 (IE)  
Paul Single Family Residence Lightning Induced Fire, Monticello, Illinois – 1997 (IE)  
Hoopeston Illinois Water Plant Instrumentation Failure due to Lightning Strike – 1997 (IE)  
Crop-duster Severs High Voltage Line – 2014 (IE)  
Residential Fire/Smoke Damage Investigation, Mahomet, IL – 2015 (IE)  
Bowling Alley Service Connection Damage, Springfield, IL – 2015 (IE)  
Strip Mall Retail Store Fire, Appleton, Arkansas – 2015 (IE)  
Residential Electrical Fire, Colmar, Illinois – 2016 (IE)  
Pickup Truck Fire, Sunman, Indiana – 2016 (IE)  
Induction Welder Failure, Galena, Illinois – 2017 (IE)  
Numerous other insurance and forensic investigations.



### Expert Witness – Current Ongoing Cases – Prior to Testimony

Concert Attendee Trip and Fall Injury – Outdoor Lighting Case – 2018 (P)  
Building Occupant Injuries – Electrical Construction PCB Issues – 2018 (D)  
Head Injury of Referee from Falling Light Fixture – Lighting Case 2019 (P)  
LEO Involved Shooting Death – Lighting Case – 2020 Criminal Prosecution  
Nighttime Trip and Fall on Outdoor Staircase at Shipping Warehouse – Lighting Case 2020 (P)  
Railroad Yard Employee Injuries – Outdoor Lighting Case – 2020 (D)  
Indoor Softball Pitcher Injuries – Indoor Lighting Case – 2021 (P)  
Two Car Crash w/ Multiple Amputations – Outdoor Lighting Case – 2021 (D)  
HondaJet Electrical Fire – 2021 (P)  
Trucker Trip & Fall on Outdoor Staircase – Lighting Case – 2021 (D)  
Vehicle-Bicycle Wrongful Death – Tunnel Lighting Case – 2021 (P)  
Vehicle-Vehicle Collision w/ Injuries – Blinding Lights Case – 2021(P)  
Employee Wrongful Death on Factory Floor, SCADA case – 2021 (D)  
LEO Involved Shooting of Depressed Father – Lighting Case 2021 (P)  
Motel Guest Falling Down Staircase – Lighting Case 2022 (P)  
Exploding Light Fixture Burned Greenhouse – 2022 (P)  
Electrician Electrocuted While Installing Roof-Mounted Equipment – 2022 (P)  
Painter High Voltage Electrocution on Man-Lift 2022 (D)  
Pedestrian Injured by Falling Light Fixture Parts – 2023 (P)  
Vehicle-Pedestrian Collision at Crosswalk, HI, Lighting Case – 2023 (P)  
Failing Lighting Fixture Mounts – Lighting Case – 2023 (P)  
Natural Gas Explosion Destroys New House – Electrical Case – 2023 (D)  
Agricultural Delivery Driver Electrocuted Through Truck Boom – 2023 (D)  
Maintenance Worker Electrocuted on 12,470V HV Primary – 2023 (P)  
Electrician Injured after Wearing Arc Flash Suit – 2023 (D)  
Youth Injured on Electric Scooter – Lighting Case – 2023 (P)  
Woman on ATV Killed at Intersection – Lighting Case – 2023 (P)  
Pedestrian Killed in Hit-and-Run in Miami – Lighting Case – 2023 (P)  
Electrician Electrocuted in Refinery Environmental Cleanup – HV Electrical Case – 2023 (P)  
Audio Tech Wrongful Death by Electrocution at Auto Race – 2023 (P)

### Expert Witness – Deposition Witness and/or Witness at Trial

Milk Distributor – Route Driver Electrocution – 1992 (D)  
Shopping Mall Shooting – Fact Witness at Trial  
Lighting Contractor – Contractor Negligence – Liquidated Damages, Breach of Contract – 2004 (D)  
60 Story Building Security System Installation – Breach of Contract Claim – 2014 (D)  
Fertilizer Manufacturer – Industrial Amputation due to Controls Failure – 2015 (D)  
Industrial Injury – Exploding 65 KV Electrical Equipment – 2016 (P)  
Pedestrian Injured by Pickup Truck – Illumination Case – 2017 (P)  
Substation Damage Following Crane Tip-over – Fire/Explosion Electrical Power Case – 2017 (D)  
Residential Light Trespass – Illumination Case – 2018 (P)  
Youth Injury on Electrical Outlet – Electrical Case – 2018 (P)  
Head Injury of Child from Falling Lighting Equipment – Lighting Case 2018 (P)  
Electrocution of Electrician on Parking Lot Lighting Fixture – Lighting/Electrical Case 2018 (P)  
Customer Trip and Fall Injury – Parking Lot Illumination Case – 2018 (P)  
Contract Dispute – Fact Witness at Deposition (not as expert) – 2018 (D)  
Residential Electrical Fire – Multi-Origin Fire Investigation – 2018 (D)  
Contractor Negligence Dispute – Failure of Church LED Lighting Equipment 2019 (P)  
Railroad Employee Double Amputation – Outdoor Lighting Case – 2019 (D)  
Employee Shock and Burn Injuries from UPS/Electrical Outlet – 2019 (P)  
Non-Fatal Electrocution Injury on Residential Cooking Range – 2019 (P)  
Coal Mine Vehicle Accident – Wrongful Death – Lighting Case 2020 (P)  
Trip and Fall Injury in Nightclub on a Cruise Ship – Lighting Case 2020 (P)  
Pedestrian – Vehicle Wrongful Death at Intersection Crosswalk – Lighting Case 2020 (P)  
Residential Electrocution – Electrical Case 2020 (P)  
Electrician Electrocuted at Indoor Switchgear – Wrongful Death Electrical Case – 2021 (D)  
Electrician Shock at Pad Transformer – Arc Flash HV Electrical Case – 2021(D)  
Vehicle-Pedestrian Collision Wrongful Death, HI – HPS to LED Conversion Lighting Case 2021 (P)

### Expert Witness – As Consultant, or Settled Prior to Testimony

Drake v Illinois Power, Single Family Residence, Utility Induced Fire – Champaign, IL – 1991 (P)  
Cabot Chemical Manufacturing Corporation – Karbate Vessel Disintegration – 1992 (D)  
Bidner Farm Steel Disintegration from Natural Gas Pipeline Cathodic Protection – 2009 (P)  
Industrial Scrubber Fire, Memphis, TN – Mechanical Component Failure – 2014 (D)  
Double Electrocution, Wellman, Iowa – 7.2 kV Contact – 2015 (P)  
Residential Contractor Quality Dispute – Construction Contract Claim – 2015 (P,D)  
Municipal Reservoir Pumping Station – SCADA System Case – Tank Rupture – 2015 (D)  
Trucking Company – Slip & Fall Injury – Illumination Case – 2015 (P)  
41 Vehicle Accident – Illumination Case – 2016 (P)  
Man Lift Worker Electrocution – High Voltage Electrical – 2016 (P)  
Electrical Contractor Breach of Contract Regarding Overages – 2106 (P)  
Billboard Worker HV Electrocution – 2016 (P)  
Worker Electrocution on Man Lift – HV Electrical Power Case – 2017 (P)  
Wastewater Treatment Plant General Contractor Breach of Contract – 2017(P)  
Motorist Fatality on Bridge – Illumination Case – 2017 (P)  
Worker Fatality Due to Control System Failure – Electrical Control Case – 2018 (P)  
Construction Worker Injury on Jobsite at Night – Illumination Case – 2017 (D)  
Copper & Brass Manufacturer – Double Amputation – Illumination Case – 2018 (D)  
Double Fatality in Construction Zone – Illumination Case – 2018 (P)  
Employee Burn Injury from Electrical Outlet – 2018 (P)  
Trucker Fatality in Parking Lot of Transfer Yard – Illumination Case – 2018 (P)  
Worker Injury on Ski Lift – Electrical Control Case – 2018 (D)  
Worker Electrocution on Light Fixture during School Construction – 2018 (D)  
Worksite Metal Halide Lamp Outer Envelope Failure UV Burn Injuries – 2018 (D)  
Employee Trip and Fall Injury – Indoor Lighting Controls Case – 2018 (P)  
Residential Fire and Explosion from Gunpowder Deflagration – Fire Investigation – 2018 (D)  
Cheer Event Trip and Fall Injury – Indoor Lighting Case – 2019 (D)  
Rooftop Explosion and Fire – Wrongful Death Case – 2019 (P)  
Auto-Pedestrian Impact Injuries – Parking Garage Lighting Case 2019 (P)  
Pedestrian Non-Fatal Electrocution Injury from Exposed Wiring – 2019 (P)  
Maintenance Worker Electrocution Changing Light Bulbs – 2020 (P)  
Grocery Store Parking Lot Vehicle – Pedestrian Injury – Lighting Case 2020 (D)  
Wastewater Treatment Plant Construction Delay Damages Dispute – 2020 (D)  
Lighting Fixture Design and Manufacturing Dispute – Lighting Equipment Case 2020 (D)  
Lineman Utility Pole Construction Injury – 2020 (P)  
Worker Electrocution Changing a Light Fixture – 2020 (P)  
Painter HV Electrocution on Roof – 2020 (P)  
Vehicle Crossed Median Caused Permanent Disability – Lighting Case 2020 (P)  
Double Electrocution in Utility Owned Transformer Enclosure – High Voltage Case 2020 (D)  
Baggage Employee Wrongful Death on Airport Ramp – Lighting Case 2020 (D)  
Outdoor Stair Injuries at Hospital – Lighting Case – 2021 (P)  
Vehicle-Pedestrian Collision Injuries, CA – HPS to LED Conversion Lighting Case – 2021(D)  
Vehicle-Pedestrian Collision Wrongful Death, CA – LPS to LED Conversion Lighting Case 2021(P)  
Employee Maintenance Man Electrocuted Changing Ballast – Lighting/Electrical Case – 2021 (P)  
Theater Worker Injured by Arcing Theatrical Lighting Fixture 2022 (P)  
Grocery Store Food Vendor Disabled in Restroom Fall – Lighting Controls Case – 2022 (P)  
Electrician Arc Flash Injury with Permanent Disability – 2023 (D)  
Employee Fell Through Ceiling and was Paralyzed – Light Fixture Case – 2023 (P)

## **ILLUMINATION ENGINEERING DESIGN PROJECTS**

### **Street, Roadway, and Parking Lot Illumination Design Projects:**

City of Urbana 22 Downtown Parking Lots LED Lighting Replacement, Urbana, IL. 2012  
City of Urbana Race Street UHS Lighting Replacement, Urbana, IL. 2013  
Town of Barnstable Street Lighting Master Plan, Hyannis, MA. 2007.  
Town of Barnstable Main Street Lighting Design, Hyannis, MA. 2008.  
Town of Barnstable HYCC Parking Lot Lighting, Hyannis MA. 2008.  
Town of Barnstable Bearse's Way Roundabout Lighting, Hyannis MA. 2009.  
Town of Barnstable Prioritized Lighting Action Plan, Hyannis MA. 2009.  
Town of Barnstable Walkway To The Sea Lighting. 2010.  
City of Champaign Street Lighting Master Plan. Chief Lighting and Electrical Engineer. 1993.  
North Prospect Avenue. City of Champaign Street Lighting. 1994.  
Marketview Drive. City of Champaign Street Lighting. 1994.  
Northwood 4th Subdivision. City of Champaign Street Lighting. 1994.  
City of Champaign Area 4B Residential Series Street Lighting Replacement. Const: 1996.  
City of Champaign Boneyard Creek LAMAR Project Street/Walkway Lighting. Const: 1998.  
City of Champaign Area 4A Residential Series Street Lighting Replacement. Design: 2000.  
City of Champaign East Side Streetscape Project Phase I. Construction: 2000-01.  
City of Champaign 2002 Alley & Parkette Project. Construction: 2002.  
City of Champaign Campustown Infrastructure and Streetscape Project. Constr. 2002-3.  
Residential Series Streetlight Modernization, Zone 2. Urbana, IL. Const: 1998.  
Lighting Equipment 10-year Purchasing Agreement. Urbana IL. 1998.  
Residential Series Streetlight Modernization, Zone 3B. Urbana, IL. Const: 1999.  
Residential Series Streetlight Modernization, Zone 3A. Urbana, IL. Const: 1999.  
Residential Series Streetlight Modernization, Zone 3C. Urbana, IL. Const. 2000.  
Residential Series Streetlight Modernization, Zone 3B – Phase 2. Urbana, IL. Const. 2003.  
Urbana Downtown Streetscape/Streetlighting Phase IV. Urbana, IL. Const. 2002.  
Urbana Downtown Streetscape/Streetlighting Phase V. Urbana, IL. Const. 2003.  
Engineering Quad Lighting. University of Illinois. Construction: 1995.  
City of Tuscola Downtown Streetscape Project. Construction: 2000 and 2003.  
City of Chenoa, Illinois Streetscape Lighting. Construction: 1998.  
Village of Ivesdale, Illinois Streetscape Lighting. Construction: 2000.  
Village of Monticello, Illinois Streetscape Lighting. Construction: 2000.  
Emmanuel Memorial Episcopal Church, Champaign, Illinois. Parking lot lighting. 1996.  
Numerous parking lot lighting installations.

### **Industrial/Commercial Lighting Design Projects:**

First State Bank of Monticello Drive-up Addition. Monticello, Illinois. 1999-2000.  
Tactical Vehicle Repair Facility at Fort Knox, Kentucky. 1983.  
Energy Conservation Lighting Retrofit. Kraft/Humko Food Products, Champaign, IL. 1982.  
Plantwide Lighting Survey (50 acre). Quantum Chemical, Tuscola, Illinois. 1989.  
Grien Candy Factory, Robinson, Illinois. 1979.  
Heath & Sons Candy Factory, Robinson, Illinois. 1976.  
Indoor and outdoor lighting design at over 50 water and wastewater treatment facilities.

### Sports Lighting Design Projects:

Sullivan Civic Center Inspection & Renovation Project. Sullivan, Illinois. 1999-2000.  
Atkins Tennis Center Indoor Tennis Court Lighting Modifications. Univ. of Illinois, 1997.  
University of Illinois Baseball Stadium Lighting Design Review. Fall 1996.  
University of Illinois Outdoor Tennis Facilities Renovation. Completed 1993.

### Architectural Lighting Design Projects:

Temple Baptist Church, Champaign, Illinois. Sanctuary and exterior lighting design. 1992.  
Air Force Museum, Dayton, Ohio. Complete electrical and lighting design. 1985.  
Cross County Mall Restaurant, Charleston, Illinois. 1978.  
Diamond Dave's Taco Restaurant, Market Place Mall. 1983.  
New Covenant Fellowship. Sanctuary and classroom renovation. 1992.  
Vineyard Christian Fellowship Gymnasium / Multipurpose building. 1996.

### HIGH VOLTAGE POWER DISTRIBUTION DESIGN PROJECTS

Saline Valley Conservancy District Regional Water Facility, Harrisburg, Illinois. 1981.  
Tactical Vehicle Repair Facility at Fort Knox, Kentucky. 1983.  
Nabisco-Chuckles Substation Replacement. Danville, Illinois. 1984.  
Naperville East Side Water System Pressure Improvements. Naperville, Illinois. 1985.  
Air Force Museum, Dayton, Ohio. Complete electrical and lighting design. 1985.  
Peterson/Puritan, Inc. Pretreatment Facilities. Danville, Illinois. 1988.  
Mendota WWTP Reconstruction, Electrical and Controls. Mendota, Illinois. 1994.  
U-C Sanitary District Plant Redesign and Co-Generation Facilities. Urbana, Illinois. 1998.  
Plastipak, Plant High Voltage Distribution System Redesign. Champaign, Illinois. 1999.

### DESIGN PROJECTS – ELECTRICAL POWER AND CONTROLS (SCADA), HVAC AND PLUMBING - WATER TREATMENT FACILITIES

Mahomet Water Plant Control Modifications. Mahomet, Illinois. 2000.  
Mahomet Wells Nos. 4 & 5 Upgrade. Mahomet, Illinois. 1999 - 2000.  
Mahomet Water Plant PLC Programming. Mahomet, Illinois. 1998.  
Mahomet Water Plant – HSP Control Modifications. Mahomet, Illinois. 1998.  
Heyworth Water Plant, Wells & Tower. Heyworth, Illinois. 1998.  
Bement WTP Improvements. Bement, Illinois. 1998.  
Lawrenceville Standpipe and Emergency Generator. Lawrenceville, Illinois. 1997.  
Mahomet Water Tower and WTP Controls Modifications. Mahomet, Illinois. 1997.  
Newman Water Tower and Well #5. Newman, Illinois. 1997.  
Stone Creek Irrigation Well. Urbana, Illinois. 1997.  
Ashkum Water Plant Electrical Controls Replacement. Ashkum, Illinois. 1996.  
Hoopeston Water Plant Electrical Controls Replacement. Hoopeston, Illinois. 1996.  
Oakland WTP Electrical Service and Controls Replacement. 1996.  
Paxton Water Tower, Paxton, Illinois. 1996.  
Sheldon Water Plant Well Replacement and Generator Relocation. Sheldon, Illinois. 1995.  
Watseka Well #6. Watseka, Illinois. 1995.  
Hartsburg Water Tower. Hartsburg, Illinois. 1994.  
Danforth Water Treatment Plant Replacement. Danforth, Illinois. 1993.  
Oakland WTP Clarifier Addition. Oakland, Illinois. 1993.  
Bement Water Tower Replacement. Bement, Illinois. 1992.



Bement Well #3. Bement, Illinois. 1992.  
Newman Water Plant Replacement. Newman, Illinois. 1992.  
Alvin Water Plant Renovation and Controls Replacement. Alvin, Illinois. 1991.  
Emington Water Plant Replacement. Emington, Illinois. 1991.  
Paxton Water Treatment Plant, Paxton, Illinois. 1991.  
Longview Water Plant. Longview, Illinois. 1990.  
Fithian Wells #5 & #6. Fithian, Illinois. 1990.  
Watseka Water Tower. Watseka, Illinois. 1990.  
Blue Mound Water Plant Renovation. Blue Mound, Illinois. 1989.  
Hoopeston Water Plant Emergency Generator. Hoopeston, Illinois. 1989.  
Mahomet Water Well #5. Mahomet, Illinois. 1989.  
Crescent City Water Tower and Generator. Crescent City, Illinois. 1988.  
Pesotum Water Plant Improvements. Pesotum, Illinois. 1987.  
Fairmount Water Plant Improvements. Fairmount, Illinois. 1986.  
Pesotum Water Plant Renovation and Well Addition. Pesotum, Illinois. 1986.  
Naperville East Side Water System Pressure Improvements. Naperville, Illinois. 1985.  
Clifton WTP Improvements. Clifton, Illinois. 1984.  
Rankin Water Treatment Plant Renovations. Rankin, Illinois. 1984.  
Thomasboro Water Treatment Plant Improvements, Thomasboro, Illinois. 1984.  
Sullivan Water Plant Renovation. Sullivan, Illinois. 1983.  
Thomasboro Water Well #4, Thomasboro, Illinois. 1983.  
Chanute Air Force Base Water Plant Renovation. Rantoul, Illinois. 1982.  
Onarga Water Treatment Plant Improvements, Onarga, Illinois. 1982.  
Saline Valley Conservancy District Regional Water Facility, Harrisburg, Illinois. 1981.

#### **DESIGN PROJECTS – ELECTRICAL POWER AND CONTROLS (SCADA), HVAC AND PLUMBING - STORMWATER TREATMENT FACILITIES**

Villa Grove Stormwater Flow System Improvement. Villa Grove, Illinois. 1999.  
City of Champaign Boneyard Creek Data Acquisition System. Champaign, Illinois. 1998.  
Healey Street Detention Basin and Pump Station. Champaign, Illinois. 1997.  
Dorner Drive Retention Basin. Urbana, Illinois. 1996.  
North Point Stormwater Pumping Station. Champaign, Illinois. 1993.

#### **DESIGN PROJECTS – ELECTRICAL POWER AND CONTROLS (SCADA), HVAC AND PLUMBING - WASTEWATER TREATMENT FACILITIES**

U-C Sanitary District Station F MCC Replacement. Urbana, Illinois. 2002-2003.  
U-C Sanitary District Station X MCC Replacement. Urbana, Illinois. 2001-2002.  
U-C Sanitary District Station S MCC Replacement. Urbana, Illinois. 2000-2001.  
U-C Sanitary District SCADA System Review. Urbana-Champaign, Illinois. 2000.  
University of Illinois Swine Research Pump Station. Urbana, Illinois. 1999.  
Watseka STP Influent Pump Control Modifications. Watseka, Illinois. 1999.  
Mahomet STP Stand-by Generators. Mahomet, Illinois. 1998.  
Mahomet STP Mudwell Panel. Mahomet, Illinois. 1998.  
U-C Sanitary District Long Range Planning. Urbana, Illinois. 1998.  
Paxton STP Excess Flow Transport & Treatment Facilities. Paxton, Illinois. 1998.

Mahomet STP Filter Panel Programming. Mahomet, Illinois. 1997.  
 Georgetown Pump Station. Georgetown, Illinois. 1997.  
 Watseka Wastewater Plant Renovation, Oxidation process Addition, Plant Automation and Instrument and Electrical Controls Replacement. Watseka, Illinois. 1997.  
 Hoopeston Wastewater Plant Renovation, Filter Building Addition, Plant Automation, and Instrument and Electrical Controls Replacement. Hoopeston, Illinois. 1997.  
 Mahomet WWTP Filter Panel Controls Replacement. Mahomet, Illinois. 1997.  
 Sam Dale Lake Conservation Area Sewer Facilities. Wayne County, Illinois. 1997.  
 Watseka Wastewater Plant Renovations and Instrument and Control System Replacement. Watseka, Illinois. 1997.  
 Bond Street Lift Station and Controls Replacement. Bement, Illinois. 1996.  
 Mahomet STP Alarm Upgrade and Filter Panel. Mahomet, Illinois. 1996.  
 Lakes at Riverbend Pump Station. Mahomet, Illinois. 1996.  
 Tolono Linshar Fields Pump Station. Tolono, Illinois. 1996.  
 Watseka Mulberry Street Lift Station for Combined Sewer System. Watseka, Illinois. 1995.  
 Mendota WWTP Reconstruction, Electrical and Controls. Mendota, Illinois. 1994.  
 Tilton King Street Pump Station. Tilton, Illinois. 1994.  
 Hoopeston Route 1 Lift Station. Hoopeston, Illinois. 1993.  
 Robeson Meadows Pump Station and Generator. Champaign, Illinois. 1993.  
 Tilton Central Park Pump Station. Tilton, Illinois. 1993.  
 Cushman Street Lift Station. Bement, Illinois. 1991.  
 North Point Sewage Lift Station. Champaign, Illinois. 1991.  
 Peterson/Puritan, Inc. Pretreatment Facilities. Danville, Illinois. 1988.  
 Peterson/Puritan, Inc. Grape Creek Pump Station. Danville, Illinois. 1988.  
 Rankin Wastewater Treatment Plant Replacement. Rankin, Illinois. 1988.  
 Hoopeston Wastewater Plant Excess Flow Facilities. Hoopeston, Illinois. 1987.  
 Hutsonville WWTP Renovation. Hutsonville, Illinois. 1987.  
 Tilton Wastewater Plant Renovation. Tilton, Illinois. 1987.  
 Monticello Wastewater Plant Filter Building. Monticello, Illinois. 1987.  
 Tilton Linden Street Pump Station. Tilton, Illinois. 1987.  
 Atwood Sewer Plant Renovation. Atwood, Illinois. 1986.  
 Monticello Wastewater Plant Revisions and Additions. Monticello, Illinois. 1986.  
 Mahomet Wastewater Plant Replacement. Mahomet, Illinois. 1985.

Updated: August 15, 2023