Romualdi, Davidson & Associates
Consulting Engineers

Robert Kimmick

P.E. Electrical Engineering, CFEI, CVFI

Email: Bobk@rdaweb.com

SUMMARY ACHIEVEMENTS

Over the past 30 years Mr. Kimmick has worked in various aspects of electrical engineering in commercial, industrial and power generating facilities. He has designed power distribution, communication, fire alarm, building automation and control systems. As a facility engineer/manager he has gained broad experience in maintaining, troubleshooting and upgrading building systems and equipment. He has extensive experience with electrical engineering analysis tools, ETAP and SKM Power Tools, which he has used to perform complete analysis of nuclear power generating stations electrical systems including power flow, short circuit, power quality, and transient analyses for both AC and DC systems. A summary of Mr. Kimmick's academic and professional career follows.

PROFESSIONAL REGISTRATION

Registered Professional Engineer in Pennsylvania, Ohio, West Virginia, South Carolina and Kansas

EDUCATIONAL BACKGROUND

BSEE, Pennsylvania State University, May 1990

MSEE, Drexel University, June 2014.

PROFESSIONAL EXPERIENCE

2015- Present, Senior Electrical Engineer, Romualdi Davidson & Associates, Inc.
Principal responsible for performing a variety of engineering investigations, to include fire cause and origin (C&O), water loss, systems failures, product liability, electrocution, property loss and machine control systems defects/malfunctions.

1999- Present, ESP Engineering
Principal operating a consulting engineering firm providing electrical designs for commercial and industrial new build and renovation projects, and electrical analyses for existing facilities.

2007-2015 Principal Engineer, Westinghouse Electric Company, LLC

Responsible Engineer for the Post Fukushima FLEX electrical design at VC Summer Nuclear Station. Served as the PE in responsible charge of electrical design for the installation of electrical connection and completing analysis to support the strategy for response to a complete loss of electrical power.

Westinghouse Representative for the Nuclear Energy Institute Open Phase Working Group that developed analysis techniques, mitigation techniques, and standard designs in response to several open phase events that occurred in the global nuclear industry.

Technical Lead for the Post Fukushima FLEX electrical design. Lead a team of 6 electrical engineers responsible for the conceptual design of extended loss of AC power coping strategies at 13 nuclear power generating stations.

- Developed plant strategies and conceptual modification designs
- Specified standard connectors and equipment
- Presented our conceptual ideas at the Nuclear Energy Institute Post Fukushima conference in 2012.
- Recommended revisions to IEEE std. 308 and IEEE Std. 384 that will increase the standards scopes to deal with beyond-design basis situations.

Task Engineering responsibility on design change packages for various plants including but not limited to, VC Summer, Palisades, Palo Verde, Wolf Creek, Callaway, Diablo Canyon, Davis Besse, and Beaver Valley.

Lead System Engineer for the AP1000 plant control system design. Responsible for the plant control system design, including, but not limited to:

- Defining the system architecture and allocation of functions to the architecture
- Providing criteria for the location of over 70 control cabinets throughout the plant
- Definition of interfaces to the system from field components, sensors and other control systems

1997-2007 Staff Facilities Electrical Engineer, Sony Electronics

Plant Electrical Engineer
Responsible for directing, coordinating, reviewing and approving the work of three electrical engineers.

Engineering responsibility for entire electrical distribution system at 2.8 million square foot television manufacturing center. System consists of 12.47kV loop distribution system with 41 secondary unit substations, 1500kVA or larger.

- Completed power distribution system design for a $95 million television production line.
- Completed design of utility billing system for allocating cost of utilities to eight divisions that coexist in one building.
- Developed maintenance specification for all facility electrical power equipment.
- Completed arc-flash hazard, load flow, short circuit and coordination analysis for the entire system.

Engineering responsibility for electrical distribution system at 600,000 square foot television glass manufacturing plant. System consists of 12.47kV radial distribution system with 11 secondary unit substations, 1500kVA or larger.

- Completed arc flash hazard, short circuit and load flow analysis for the entire system.
- Completed design for the installation of 650kW load onto an existing 1,400kW diesel generator to ensure the glass tanks would not solidify during an extended electrical outage.

1995-1997 Manager, Plant Services, Powerex, Inc.

Managed physical plant, maintenance, environmental, safety, and security for 100,000 sq. ft. facility. Department includes two engineers, one supervisor and thirty hourly personnel.

1990-1995 Engineer, Westinghouse Savannah River Company

Served as a plant electrical engineer for four facilities totaling 450,000 sq. ft. for three years. Served as effluent monitoring system engineer for a 1,500,000 sq. ft. chemical separation facility for 1.5 years.

CERTIFICATIONS

- Certified Fire and Explosion Investigator, 2017, National Association of Fire Investigators
- Certified Vehicle Fire Investigator, 2021

PROFESSIONAL AFFILIATIONS

- Institute of Electrical and Electronic Engineers
- National Society of Professional Engineers
- Pennsylvania Society of Professional Engineers
- National Association of Fire Investigators, C.F.E.I.

HONORS

- Tau Beta Pi - Engineering Honor Society
- Eta Kappa Nu – Electrical Engineering Honor Society

COMPUTER SKILLS

- Proficient with OTI ETAP, and SKM PowerTools (Caper, Dapper, TCC, etc.) electrical engineering analysis software
- Proficient Allen Bradley PLC and numerical controls as well as Intellution and Wonderware SCADA software.
- Proficient with AutoCAD drafting software.
- Proficient with the Emerson Delta-V system and software.

RECENT TRAINING

- January 2015, PA State Fire Academy - *Fire Dynamics Fundamentals*
- May 2016, Fire Findings – *Investigation of Gas and Electric Appliance Fires*
- January 2017 PAAI "Jack Christmas" Arson Seminar – *Managing Large Loss Investigations, Arc Mapping, Meth Labs.*
- August 2017, McKissock, *Basics of Fire Suppression Systems*
- October 2017, IAAI, *Wildland Fires Investigation*
- October 2017, IAAI, *Writing the Initial Origin and Cause Report*
- November 2017, IAAI, *Vacant and Abandoned Buildings: Hazards and Solutions*
- November 2017, IAAI, *What the Insurance Professional Needs to Know About Fire Investigation*
- January 2018 PAAI "Jack Christmas" Arson Seminar – *Forensic Applications of Fire Protection Systems, Overview of the Investigation of Fires Involving Lighting Fixtures, Avoiding Investigative Pitfalls and conduct Unassailable Scene Investigations Involving CSST/HVAC Systems.*
- March 2018, IAAI*, The Scientific Method for Fire and Explosion Investigation*
- April 2018, IAAI, *Using Resources to Validate your Hypothesis*
- April 2018, IAAI*, The Practical Application of the Relationship Between NFPA 1033 and NFPA 921*
- June 2018, IAAI, *The Deposition Part 1: Format, Content, Preparation*
- June 2018, IAAI, *The Deposition Part 2: Questioning Tactics and Effective Responses*
- January 2019, IAAI, *Fire Dynamics.*
- January 2019 PAAI "Jack Christmas" Arson Seminar – *Origin and Cause Investigation.*
- June 2019 PAAI, *Lithium Ion Battery Fires, Hazards, Safe Handling and Concerns with Live Burn Demonstrations.*
- January 2020 PAAI, *Profiling Youthful Fire Setters and Firefighter Arsonists.*
- January 2020 PAAI, *Recognition of Deception, Crime and Violence.*
- January 2020 PAAI, *Maternal Fillicide – Molly Delgado Double Homicide, A classic Study in the use of 921 in a Murder Conviction.*
- September 2021*, Vehicle Fire Investigation Training Program*

- January 2022*, Cigarettes and Smoking Materials as Ignition Sources*
- January 2022*, Fireplace and Chimney Fires*
- October 2022*, Hypothesis Development in Fire Investigations: Theory and Practice*
- October 2022*, Evaluating Electrical Energy as an Ignition Source*
- October 2022*, Process of Origin Determination*
- August 2023*, Motor and Drive Systems*
- September 2023*, DC Circuits, Batteries, Generators and Motors*
- September 2023*, Electrical Test Instruments and Measuring Devices*
- October 2023*, Residential Electrical Systems and Appliances: The NEC and Fire Causation*
- October 2023*, Fatal Fire Investigation*
- October 2023*, Expert Deposition and Trial Testimony in Fire Litigation*

TEACHING EXPERIENCE

- November 2015, Basic Electricity, Utility Systems and Electrical Failures – Sponsored by RDAS for the Allegheny County Fire Marshalls Office
- June 2016, Electrical Evidence in Fire Investigation with a live burn demonstration – Sponsored by RDA for the Pennsylvania State Police
- October 2018, WVIAAI Fire Investigation Seminar, 8 hours of instruction on building electrical systems and electrical appliances and their impact and effect on fires.
- April 2019, ACFM Fire Investigation Seminar, 8 hours of instruction on building electrical systems and electrical appliances and their impact and effect on fires with practical demonstrations of arcing and space heater fires.
- September 2022, Beaver Falls Fire Department, 6 hours of instruction on *Lithium Ion Batteries for Fire Investigators.*
- October 2024, PAAI, *Lithium-Ion Battery Failures & Scene Processing*