

CURRICULUM VITAE

NEAL A. CLARK



Neal Clark

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AREAS OF EXPERTISE

I am an experienced troubleshooter and investigator with 39+ years of experience in Industrial Automation and built environment. My areas of technical expertise include: industrial electronics technology, instrumentation and controls (I&C), electrical control circuit design; instrumentation installation, calibration and setup; electrical control panel design and installation; Supervisory Control and Data Acquisition (SCADA) design & programming, Programmable Logic Controller (PLC) programming; equipment and systems installation and start-ups; systems evaluation, troubleshooting, repairs, training, and process improvements; project management, and technical support to engineering disciplines.

PROFESSIONAL QUALIFICATIONS

Education

United Electronics Institute – Louisville, Kentucky
Electronics Technologies Diploma, 1975

Parkland College – Champaign, Illinois
FCC License preparation, Spring 1979
Electrical Controls & National Electrical Code, Fall 1980
C Language Programming, Spring 1992

Certificates (CEU) 7000 Electric Analog Control, Bailey Controls Company, February 1980
PLC 2 Level 1, Allen-Bradley, November 1982
PLC 2/15 - 2/30 Level 2, Allen-Bradley, May 1983
LSI System Maintenance, Digital Corporation, March 1986
SPC I Basic Series, Technicomp, January 1989
Basic Product School, ABB, February 1996
S121 Quantum Level 1, Square D, May 1996
Variable Frequency Drives, ABB, February 1997
Eaglesoft Dental Practice Software, Patterson, December 2012
Fire Investigation, Investigative Engineers Association (I-ENG-A), May 2015
Investigative & Forensic Engineering, I-ENG-A, May 2015

Training Courses Given “Project Expansions & Upgrades Training” 40 hrs; for Operations & Maintenance personnel, at Central Lake County Joint Action Water Agency, Lake Bluff, Illinois.

“Advanced Citect SCADA Software Implementation Training” 80 hrs; for NASA Contractor Engineers and supporting staff; at Kennedy Space Center, Cape Canaveral, Florida. Course content included best practices, project organization, standardization of colors, text, symbols, screens, and advanced programming.

Association Memberships Control System Integration Association (CSIA), since 2006
International Society of Automation (ISA), past member
Investigative Engineers Association (I-ENG-A), 2015

Professional Experience

Summary I have 39+ years of experience in investigation, startups, troubleshooting, implementation, project management, and I&C design. Instrumentation design work includes specifications, configuration, calibration, and installation. Control design work includes hardware specifications; Control Panel design; Programmable Logic Controllers (PLC); Motor Control Centers (MCC); Variable Frequency Drives (VFD); project specific Industrial Communication Networks and Computer Systems.

A significant attribute and successful quality of my career has been; to acquire an understanding of the overall process and scope of needs to fit the control task at hand.

Employment History June 2010 to present
Clark Technical Services
As an Instrumentation & Controls (I&C) Specialist I provide technical services primarily in the field of Industrial Automation. Typical services are instrumentation and controls design, PLC programming, installation and startup, calibration, troubleshooting, specification and reports, product research, client coordination for improvements, upgrades, repairs; and forensic investigation services.

Major Projects I&C Troubleshooting and Investigative work. Client: TekMill, Champaign, Illinois, Pallet Machine Builder, programming consultation and troubleshooting.

I&C Startup and Troubleshooting work. Client: ECM Manufacturing, Shawnee, Kansas, commission 26 Capper and Filler production lines for an electronic cigarette manufacturer. Work included troubleshooting, repairs, wiring modifications, PLC, Robot, & Operator Interface Terminal (OIT) programming, training personnel, and process improvements.

Forensic Investigative work. Client: Burtness Engineering Services, White Heath, Illinois.

Fertilizer Manufacturer, mixer control panel safety circuit
Water Distribution Control System; ground storage tank rupture
Trucking Company, slip & fall injury, illumination study
Electrical Equipment Recycler, employee injury, circuit switcher rupture / case
research.
Machine Shop, Brazing Induction Generator failure investigation.
Fire cause and origin.

I&C Design work. Client: City of Mahomet, Illinois, Wastewater Plant
Expansion project, Instrumentation and Controls Design Bid Specification.

I&C Troubleshooting and Investigative work. Client: City of Campaign; Healey
Street Storm Water Basin Pump Station project, control system evaluation and
troubleshooting. Improvements to the repair processes, accountability, and
personnel training were included.

Employment History

October 2000 to June 2010
SCADAware Inc., Bloomington, Illinois, a Controls Systems Integration firm.
As Vice President my responsibilities included Engineering Manager, and
Business Operation projects management.

Major Projects

I&C Design, Implementation, & Startup work. Client: Caterpillar, Decatur,
Illinois, Frame Paint Booth & Robotic Controls Upgrade project. Replaced
obsolete control hardware with personal computer based software control, and
new input / output (I/O) system.

I&C Design, Implementation, & Startup work. Client: Caterpillar, Decatur,
Illinois, Construction Vehicle Axel Shaft Cell Control project. Using personal
computer based software; commands to the Robot route parts through the
manufacturing machining cell, optimizing cycle times, acquiring historical part
tracking data for global part traceability.

I&C Design, Implementation, & Startup work. Client: Caterpillar, Decatur, Illinois, S-
Bay Final Paint Line Automation project. Construction Vehicles and
components are indexed through the various stages of the painting process by
a large chain; controlled by personal computer based software, and SCADA
control of the HVAC system.

I&C Design, Implementation, & Startup work. Client: Central Lake County Joint
Action Water Agency, Lake Bluff, Illinois, Facilities Expansion project. The
expansion project included a new Sludge Dewatering Facility, pump upgrades,
redundant SCADA system upgrade, PLC upgrades, network communications
expansion, process instrumentation, and a new Facility Monitoring System, (i.e.,
HVAC, lighting, fire alarm, and security) integrated into the SCADA system.

I&C Design, Implementation, & Startup work. Client: City of Rock Falls,
Illinois, Project Water Treatment Plant Control Improvements. The Aquatrol
SCADA panel was replaced with a new SCADA panel, and new input / output
(I/O) system. Remote telemetry data is acquired over fiber optics network.

I&C Design, Implementation, & Startup work. Client: Town of Normal, Illinois, Project Radio Telemetry System Upgrade and SCADA Control. A telemetry licensed radio system was replaced with an unlicensed spread spectrum 2.4 gigahertz radio system, SCADA upgrades, and new input / output (I/O) system.

I&C Design, Implementation, & Startup work. Client: Town of Normal, Illinois, Public Works Project Wastewater Lift Station Control project. The Wastewater Lift Stations were brought into the upgraded SCADA and new radio telemetry system.

Employment History

March 2000 to October 2000

Ci Technologies Systems Integration, Bloomington, Illinois

As the Bloomington Office Manager, my responsibilities included Project Management and Office Coordination duties. The Bloomington Office had two major contracts with Caterpillar, Decatur, Illinois; the Construction Vehicle Axle Cell Control project, and the Frame Prime Paint Cell Upgrade project; that were then transferred to SCADAware Inc. before completion.

Employment History

July 1995 to March of 2000

Springfield Electric Supply Company / Springfield Automation, Bloomington, Illinois

As the Senior Engineering Project Manager, my responsibilities included project management, sales support, PLC & SCADA system design and programming,

Major Projects

I&C Design, Implementation, & Startup work. Client: US Steel, Gary, Indiana, SCADA design, build, installation, startup project. There were two SCADA system designs and programming for Steam Boiler water treatment facilities.

I&C SCADA Design & Programming work. Client: Texas Gas Pipe Line, Owensboro, Kentucky; Large 26 Compressor Station Redundant SCADA Server / Client System project. This project was implemented at a fraction of the cost over traditional and more expensive Distributed Control Systems. Texas Gas owns and operates a natural gas pipe line running from the Gulf of Mexico in Louisiana to Indiana and Ohio.

Employment History

April 1990 to June 1995

Integrated Controls and Computer Systems, Savoy, Illinois. As Systems Programmer my responsibilities included writing Sequences of Operations, Operation and Maintenance Manuals, cost estimates, proposals, project management, electrical control circuits & panel design, PLC & OIT programming, system troubleshooting & startups.

Major Projects

I&C Startup and Troubleshooting work. Client: Memtek, Boston, Massachusetts, two Industrial Wastewater Filtration projects. One system was

for removal of heavy metals for a printed circuit board manufacturer; and the other was for treating the effluent from an industrial laundry facility.

I&C Startup, and Troubleshooting work. Client: Tinker Air Force Base Logistics Center, Oklahoma City, Oklahoma, Material Transport System for Cell Control, Jet Engine Casing Repair project. The transporter, receiving commands from Cell Control, retrieves and delivers Jet Engine casings to required locations within the machining cell.

I&C Design, Implementation, & Startup work. Client: City of Danville, Illinois, Sanitary District, Wastewater Plant Controls Improvements project. After sustaining much flood damage in 1994, the wastewater facility underwent significant SCADA, PLC control, pumping algorithms, and communications improvements.

I&C Design, Implementation, & Startup work. Client: Kraft Foods, Champaign, Illinois, Horizontal Cheese Cookers #19 & 20 project. This project was to provide the PLC code, from Kraft's sequence of operation; using Texas Instruments APT software. The startup was very successful, resulting in only one 55 gallon drum of scrape.

I&C Design, Implementation, & Startup work. Client: Kraft Foods, Champaign, Illinois, Packaging Palletizer Controls Retrofit project. I replaced old relay logic controls and tape reader with PLC controls within the existing electrical panel. Palletizing patterns were included in PLC code.

I&C Design work. Client: City of Sterling, Illinois, Water Treatment Plant Control Improvements project. Reversed engineered the wiring of two control panels and developed AutoCad drawings.

I&C Design, Implementation, & Startup work. Client: Diamond Star Motors, Normal, Illinois, Body Shop SCADA Monitoring System project. The SCADA system collected data from 300 PLC controlled assembly stations over serial communications. My responsibilities included SCADA & PLC programming, and serial communications troubleshooting.

Employment History

September 1976 to April 1990

Kraft Food Ingredients Corporation, Champaign, Illinois, an Edible Oil Processing Plant. I worked in Filling and Packaging Department from September 1976 to August 1977; then in the Instrument Shop from August 1977 to April 1990. As Instrument Repairman my responsibilities were to calibrate, troubleshoot, repair, and maintain Electronic and Pneumatic Instruments. During my tenure, I worked as technical support to the Engineering Staff on many expansions and upgrade projects; and received two Key Contributor Awards for my work.

Updated: July 30, 2017