Nowland Services PLLC
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Professional Projects Curriculum Vitae

1991-1999 AQUATRAK SYSTEMS, BRATTLEBORO, VT

TITLE: ELECTRICAL ENGINEER, OWNER

3/94	Water Filtration Plant, Hatfield, MA. Worked for Almer J. Huntley Jr. and Associates, Inc., 30 Industrial Drive East, Northampton, MA. Worked for Henry Nodarse, P.E., Project Manager. Electrical power distribution, lighting, pump controls, instrumentation and analyzers, remote reservoir monitoring, lighting surge protection, and control panel design and spec.
9/94	Almer J. Huntley Jr. and Associates, Northampton, MA. Colrain Fire District No. 1 Water System Compliance Project, Colrain, MA. Henry Nodarse, P.E., Project Manager. Electrical design for drinking water pump station and remote storage tank level controls. High reliability and lightning protection were most important.
3/95 thru 8/95	Albany County Sewer District, Albany North Wastewater Treatment Plant, Albany, NY. Worked for Douglas Peterson and Associates, P.O. Box 777, Greenfield, MA 01302-0777. Will Cassidy, P.E., Project Manager. A lightning strike damaged various controllers and equipment in the wastewater plant. Evaluated equipment to determine extent of damage and cost to replace for insurance purposes.
10/95	Ashfield Water District Water Supply and Storage District, Ashfield, MA. Worked for Henry Nodarse, P.E. at Almer J. Huntley Jr. and Associates, Inc., Northampton, MA. Specifications and electrical drawings for power distribution, controls, and instrumentation for public drinking water pump station facilities.
4/96	Long Beach Aquarium, Long Beach, CA. Worked for Michael Rozenblum, P.E., Project Manager, Syska & Hennessy, One Broadway, Cambridge, MA. Designed Life Support System (LSS) level, flow, temperature, pumps, ozone systems, and valve controls. Developed Piping and Instrument Diagrams (P&IDs), generated equipment and operation specifications, and designed integrated networked controls system.
1/98 thru 5/98	Colrain Business Retention and Growth Project, Colrain Sewer District, Griswoldville Water District, Griswoldville, MA. Worked for Almer J. Huntley Jr. and Associates, Inc. Henry Nodarse, P.E., Project Manager. Remote water storage tank level monitoring and controls. Well pump station controls, power distribution, control panel design.
2/98 thru 12/98	Ocean Life Center, Atlantic City, NJ. Subcontractor to Baumgardner Construction, CB Danner, Project Manager. Designed and built a level control system for a multi-exhibit student research facility. Level system include pump motor controls, tank level controls, and operator interface panel. Installed and started up system.
3/98	The Columbus Zoo Manatee Facility, Columbus, OH. Worked for Syska & Hennessy, One Broadway, Cambridge, MA 02142, Michael Rozenblum, P.E., Project Manager. Life Support, seawater makeup, exhibit, backwash, rehab, and ozone systems designed. Facility layout, P&ID and flow diagrams developed. Helped prepare drawings and specifications for bid packages.

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11/98 thru 6/99	Long Island Aquarium, Long Island, NY. Worked for Michael Rozenblum, P.E., Project Manager, Syska Hennessy Group, Cambridge, MA. Piping and Instrument Diagrams (P&ID) designed, worked with client during development of controls system and Life Support Systems. Specified controls for Life Support Systems, including water treatment instrumentation and controls for the whole facility, and for individual exhibits. Designed and specified instrumentation and controls for level, flow, ORP, pH, temperature, pressure, ozone, ultraviolet filters, motors, etc.
12/98 thru 11/00	Wonders of Wildlife Aquarium, Springfield, MO. Worked for Michael Rozenblum, P.E., Project manager, Syska & Hennessy, One Broadway, Cambridge, MA. Piping and Instrument Diagrams (P&ID) design and development of Life Support Systems. Wrote instrumentation and controls specifications for large, modern aquarium. Included bio-tower filters, ozone system, protein skimmers, ultraviolet sterilizers, process analyzers, large tanks, pumps, and valves. The controls system specified included a network of controllers and operator interfaces scattered around the facility in strategic locations.
7/01 thru 4/02	National Marine Life Center, Bourne, MA. Worked for Michael Rozenblum, P.E., Project Manager, Syska & Hennessy, One Broadway, Cambridge, MA 02142. Life Support Systems design including P&IDs and controls specifications. Tank level, flow, pressure, oxidation reduction potential, valves, and temperature controls. Load shedding scheme developed. Integration of the Life Support System, which was based on industrial programmable logic controllers, with the Build Automation System, which is a direct digital controller was a challenge.
4/02 thru 7/02	New Bedford Oceanarium, New Bedford, MA. Worked for Michael Rozenblum, P.E., Project Manager, Syska Hennessy Group, One Broadway, Cambridge, MA. This is a large aquarium with limited power available for the facility. Life Support System (LSS) designed. Piping and Instrumentation Design (P&ID), specifications and drawings for all life support systems developed for construction. Included specifying specific analytical equipment for measurement and control, controls system specification and functions, and work to integrate building controls with the LSS. Designed the control system to monitor air handler units, chiller plant, cooling towers, Life Support Systems, cogeneration system, hot water distribution and control load shedding operations. Designed the network equipment to connect various devices including a main server, 26 variable frequency drives, distributed programmable logic controllers, and various operator interface screens.
10/01 thru 10/02	National Aquarium in Baltimore, Pier 3 Expansion, Baltimore, MD. Worked for Michael Rozenblum, P.E., Project Manager, Syska Hennessy Group, One Broadway, Cambridge, MA. This is a very large aquarium expansion project that occupied a whole new pier on the Baltimore waterfront. Life Support System designed from P&ID development to detailed specifications and drawings. Bid and construction packages developed for a large multi-level facility with many exhibits. Specified instrumentation, single loop controllers, integrated plant controls system. Networked LSS controllers design integrated LSS with building HVAC controls system. Designed pump controls, ozone systems controls, bio-filter controls, temperature, pH, ORP, level, flow, etc. Taught NAIB controls systems course to help the client understand how systems work and to help with decisions about system integration, operation, maintenance, and calibration.

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5/02 thru 10/02	New York Aquarium, Brooklyn, NY. Working for Michael Rozenblum, P.E., Project Manager, Syska Hennessy Group, Cambridge, MA. Life Support System design and specification developed for bid and construction. Specified pumps, blowers, ozone system, instrumentation, process controllers, and wiring. Instrumentation included flow, level, pH, temperature, pressure, ORP, and the entire integrated control system.

1999-2001	**PROJECTS FOR IONICS, INC., WATERTOWN, MA. IONICS, INC., SUBSEQUENTLY COMPANY BOUGHT BY GE WATER, AND GE WATER BOUGHT BY SUEZ WATER TECHNOLOGIES. MARK FEINBERG WAS PROJECT MANAGER FOR ALL PROJECTS.**
	TITLE: ELECTRICAL ENGINEER
6/99 thru 10/99	D708 First Energy, Eastlake Plant, Ohio. Ultra-filtration electrical and control system designed, programmed, and commissioned from Piping and Instrument Diagram (P&ID) to turn-key completed system. Plant requires clean water for large boilers.
9/99 thru 9/00	B062 Quilmes, Andes Project, Mendoza, Argentina. Electro-dialysis reversal water purification plant designed to clean water for a beer brewery. Large plant design included 14 ac variable frequency drives to control pumps, 85KVA multi-tapped transformer, high power rectifier electrical cabinet to energize plates on water filters, and power distribution to various other motors and loads. Designed control system, which included primary plant controller and Siemens S7-300 distributed controllers connected via Profibus. Completed all PLC programming and started up the plant.
2/00 thru 1/01	B067 Cervepar, Ypane, Paraguay. Electro-dialysis reversal water purification system installed at a beer brewery. System included clean in place and chemical addition. Designed and specified electrical power and controls systems. Detailed design of UL508A control panels. Client purchased motor control centers and installed. Electric power design included 110KVA transformer and high-power rectifier design. Programmed, setup, and tested process analyzers, controllers, and control system.
9/00 thru 3/01	B137 Global Tech. Modified existing electro-deionization system electrical design to fit client needs. Quantity (2) 50gpm purification systems with chemical addition.
10/00 thru 6/01	B117 Sinai Cement. Multiple water purification system skids designed, electrical and controls equipment specified, programmed, and tested.
1/01 thru 6/01	B143 IPS/STM Microelectronics, Carrollton, TX. Quantity (4) EDI-150 electro-deionization systems were integrated into the client's plant. Designed, specified electrical equipment, instrumentation, programmed, and tested skids prior to delivery to site.
3/01 thru 6/01	D705 First Energy, Eastlake Plant, Ohio. Ultra-filtration, reverse osmosis, clean in place, and chemical addition water treatment system for utility boiler water purification. Integrated multiple skids into the plant. Designed, specified, and setup of all electric power and controls. Tasks included specification and programming of ac variable frequency drives, process analyzers, programming controllers, programming operator interfaces, and commissioning entire system. Designed UL508A Listed control panels.

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4/01 thru 6/01	B132 Seward Lodge, Alaska. Designed, specified all electrical hardware, programmed controller, programmed operator interface for a unique marine bioreactor wastewater treatment facility. All aspects of power and controls design completed, including Level and Flow cascaded loop control of ac variable frequency drives. UL Listed components and control panels. Met strict Alaska code requirements for hazardous areas.
5/01 thru 6/01	D740 First Energy, Ashtabula, Ohio. Water treatment system that included ultra-filtration, reverse osmosis, electro-deionization, clean in place, chemical addition, and ion exchange mixed bed skids. Designed power distribution system and motor controls, which included ac variable frequency drives, dc drives, 24KW heaters specification and setup, along with 18KVA transformer design. Designed and programmed entire control system including programmable controllers, operator interface, process analyzers, and UL Listed electrical cabinets.
6/01	B163 IPS/Motorola BAT-3. Re-designed three electro deionization water purification skids electrical power and control system using a different manufacturer's controller (General Electric Versamax), specified all electrical hardware, programmed controller, programmed operator interface. Integrated the skids to prepare for installation in a semiconductor processing facility.

2001-2009	CHI ENGINEERING SERVICES, INC., PORTSMOUTH, NH PROJECT MANAGERS WERE OTHER PROFESSIONAL ENGINEERS
	TITLE: ELECTRICAL ENGINEER
6/01 thru 7/01	TEPCO0102 Truck Loading Study. Texas Eastern Pipeline Products Company, Providence, RI. Heather James, Project Manager. Preliminary electrical design and cost of a new liquid propane truck loading station.
6/01 thru 11/02	CNG0004 LNG Vaporizer Installation. John Lamb, Project Manager. Rewired electrical panel to get LNG pump and vaporization system controls working. Developed operating procedures, generated project data books, programmed controller, including LNG pump cooldown. Joined project as it was nearing completion.
7/01 thru 8/01	TEPCO0103 Truck Loading Flow Increase Study. Texas Eastern Pipeline Products Company, Providence, RI. Heather James, Project Manager. Preliminary electrical design and cost of a new propane truck loading station LPG pump and associated power and controls. Plant load study was completed and summary report provided.
8/01 thru 4/02	DUKE0101 Phelps Dodge Meter Station, Phelps Dodge, Norwich, CT. John Tirrell, P.E., Project Manager. Design and specification of gas meter and regulator station feeding industrial burners in a copper facility. Tasks involved all electrical power and controls design, specification, contractor scope of work, supervision, commissioning, and startup.
10/01 thru 11/02	TEPCO0105 Truck Loading Station Heating System. Texas Eastern Pipeline Products Company, Providence, RI. Heather James, Project Manager. Design and build a heater skid and heat exchanger skid. Area classification of plant, electrical power and controls design completed. Supervised and assisted wiring of skid heaters in the CHI shop. Wrote loading procedure, programmed skid controller, supervised installation, and started up system.

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1/02 thru 12/02	IGT0201 Iroquois Gas Transmission, Athens Sales Meter Station, Athens, NY. Heather James, Project Manager. Electrical grounding, power distribution, instrumentation, and controls design and specification of large meter station to drop the pressure on the gas transmission line to feed a new 1MW power plant. Design included intrinsically safe circuits, lightning protection, station electrical and communications feed design, electrical hazardous area classification, grounding system, hazardous area wiring design, specification of electrical equipment and instrumentation, radio communications, battery backup sizing, gas detection system, building layout, conduit schedule, junction box and panel design. Generated detailed bill of materials in a client-specified database format. Worked with client through design process.
2/02 thru 11/03	PSE0201 Gig Harbor LNG Facility. Puget Sound Energy, Bellevue, WA. Peter Dirksen, P.E., Project Manager. Satellite LNG Plant electrical and controls design and specification. Included electric service, generator set, automatic transfer switch, motor control center, power distribution panels, controls panels, fire protection system, instrumentation, heaters, and controls, etc. Provided on site contractor inspections, supervision, support, plant commissioning and startup. This was a $5.5M project and electrical was about $400k.
5/02 thru 4/03	YG0207 Yankee Gas, MGT Pipeline Facility, Berlin, CT. Chris Hosford, P.E., Project Manager. Design and build of a pipeline meter and regulator station. Complete electrical design of electrical and controls system. Included design of new electric service feed, telephone feed, power distribution panel, control panel, instrumentation, fire protection system, etc. Wrote contractor bid packages, assisted with contractor selection, contractor supervision, system commissioning, and startup.
1/02 thru 12/03	EEC0211 Tennessee Gas Transmission, Shelton Meter Station, 10 Murphy Lane, Shelton, CT. Len Tremblay, P.E., Project Manager. Retrofit of existing gas meter station. Replaced four 5MMBTU/Hr heaters, heat exchangers, filters, gas and water/glycol piping, gas chromatograph, valves, water/glycol circulating pumps with pumps/VFDs, upgraded electric service, integrated heater controls, upgraded gas control remote interface, and major building modifications. Included design, contractor supervision, permitting, installation, commissioning, and startup.
6/02 thru 7/02	TEPCO0106 Uninterruptible Power Supply Design. Texas Eastern Pipeline Products Company, Providence, RI. Heather James, Project Manager. Determined critical loads that cannot have a power loss, sized, and specified an uninterruptible power supply.
7/02 thru 10/02	TEPCO0208 Plant Controller. Texas Eastern Pipeline Products Company, Providence, RI. Heather James, Project Manager. Completed a study to evaluate the best way to proceed with various, different vendor controllers in the plant. System compatibility and evolution plan was important.
1/03 thru 11/04	PSE0202 Gig Harbor LNG Facility, Commissioning and Startup Support, Puget Sound Energy, Bellevue, WA. Peter Dirksen, P.E., Project Manager. Periodic site visits to correct inexperienced contractors' installation, support Fire Protection System testing and certification, resolve equipment problems, obtained state certification of control panel and fire alarm panel, commission all equipment, cooldown the LNG tank, and startup the plant.

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3/03 thru 12/03	PSE0303 Gig Harbor LNG Facility, LNG Plant Controls System, Puget Sound Energy, Bellevue, WA. Lynda Erdbrink, P.E., Project Manager. Detailed design and specification of plant control panel, send out for bid, have a UL Listed panel built, test in the shop, support programming and testing activities, obtain Washington state panel certification, assist with panel commissioning and startup.
3/03 thru 12/03	YG0317 Yankee Gas Company. Kensington Gate Station Heater System Rebuild, Kensington, CT. Steve Walker, Project Manager. Retrofit of station heaters included evaluation of station heating needs, space limitations, evaluating and choosing heaters, detailed design, generated bill of materials, purchased equipment, assembled in shop, wrote scope of work for installation contractors, supervised installation, programmed VFD's datalogger, and touchscreen operator interface, then commissioned and started up system.
1/03 thru 7/03	OG0301 Electrical Power Generating Station, O & G Industries, Norwalk, CT. Steve Walker, Project Manager. Gas supply piping, compressor, and switchgear temporarily provided to feed a large portable generator to allow the electric utility to take medium voltage circuits out of service for maintenance and upgrades. Specified a leased container with 480volt 1200amp switchgear, temporary power and controls wiring and wireway, commissioned, and started up. Worked with hired consulting power engineer to make sure design and procedures were correct so that the power transitions went smoothly.
3/03 thru 9/03	CHI0325 CHI Engineering rental equipment design and build. John Lamb, P.E., Project Manager. Portable vaporizer electrical and controls design/build. Two portable units, pump skid and 56foot trailer with 750MMSCFH two-burner water bath vaporizer. Vaporizer included water bath, gas heating, generator, power distribution panel, and controls. Pump skid included two VFD-controlled 60HP LNG pumps. Designed unit on paper, generated bill of materials, purchased all electrical equipment, built power distribution panel and controls, trailer instrumentation, emergency stop stanchions, lighting, and all aspects of the electrical system. Generator set, power distribution and controls cabinet, heater burner controls, and other sub-systems specified, designed, purchased, installed, and commissioned. Tractor trailer unit built for leasing.
6/03 thru 4/04	SL0301 Generator Synchronization. Cornell University, Appledore Island, Isle of Shoals, Kittery, ME. Marty Nowland, Project Manager and Engineer. Visited island and evaluated why there were problems with synchronizing generators and with electrical shocking. Found phantom neutrals, inadequate grounding, code violations, and lack of operating procedures. After working with client to determine their needs, designed and specified new generator synchronization panel, sent for bids, evaluated bids, hired fabrication and installation contractors, supervised installation, and supported startup.
1/04 thru 5/05	SL0402 Isle of Shoals-NOAA Equipment Power. Cornell University, Appledore Island, Kittery, ME. Marty Nowland, Project Manager and Engineer. Visited island and evaluated National Oceanographic and Atmospheric Administration weather monitoring equipment power requirements. Designed new power distribution panel to accommodate equipment. Wrote scope of work, hired contractor, supported installation of equipment.

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1/04 thru 5/05	BGE0328 Vaporizers Replacement. Baltimore Gas & Electric Company, Baltimore, MD. Peter Dirksen, P.E., Project Manager. Designed, specified, and supported commissioning retrofit of four large water bath vaporizers. Difficult design since motor control centers were being moved at the same time, hazardous area changes were concerns, and equipment sits on contaminated soils.
2/04 thru 12/04	YG0319 Yankee Gas Company, Kensington Meter Station, Kensington, CT. Steve Walker, Project Manager. Rebuild piping, controls and electrical upgrade. Compare controllers and operator interfaces for client. Electrical and controls design, specification, purchase equipment. Scope of work bid requests, evaluations, and hired electrical contractor. Programmed variable frequency drives, station controllers, and operator interface panel. Challenging state and PID programming. Detailed programming to provide station status and alarms to Gas Control. Commissioned and started up station.
3/04 thru 8/04	SJG0419 South Jersey Gas Company, Howell LNG Facility, NJ. Peter Dirksen, P.E., Project Manager. Upgrades at the plant included new control room, 480volt motor control center, additional fused disconnect switch so plant meets code, ac and dc load calculations, upgrade the hard-wired emergency shutdown system, and designed a new control system. Performed a load analysis including the electric service and main plant transformer. Resolved a code violation with a simple design and limited installation work. Designed, specified, purchased specialized electrical and controls equipment. Generated a scope of work for the electrical and controls contractors, requested proposals, evaluated bids, and hired an electrical contractor. Passed project over to another electrical engineer once we were well into construction.
3/04 thru 10/05	BGE0329 MRL Replacement. Baltimore Gas & Electric Company, Baltimore, MD. Peter Dirksen, P.E., Project Manager. Electrical and controls design of gas purification skid to retrofit the existing mole sieve system. Evaluate existing wiring and motor control centers. Process area lighting design, heater electrical and controls design and specification, underground conduits in contaminated soil design, specify motor control center changes, and direct electrical contractor as changes were implemented.
2/04 thru 5/05	CGS0437 Staunton LPG Fire Detection Replacement. Columbia Gas Services, Lynchburg, VA. Heather James, Project Manager. Propane-air facility flame detection system retrofit. Design included wiring, locate detectors, write scope of work, battery backup design for system, supported contractor installation of new flame detectors using existing wiring to the extent possible.
4/04 thru 2/05	FRG0434 LPG Plant CVD, Fall River Gas Company, Fall River, MA. John Lamb, P.E., Project Manager. Evaluate combustible vapor detectors and system to determine how to get the system working and meet code with minimal work in the plant. Used existing wiring.
1/04 thru 8/04	DUKE0407 Middleboro Meter Replacement. Middleboro Gas Company, Middleboro, MA. Steve Walker, Project Manager. Detailed design of instrumentation and controls to replace a flow meter and other instrumentation in a gas meter station. Designed intrinsically safe circuits and determined how to interface with existing remote telemetry unit. Conduit details provided for electrical contractor. Supervised electrical contractor.

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1/05 thru 4/05	ATV0401 Virginia Natural Gas Company, Pivotal Plant, Chesapeake, VA. Chris Hosford, P.E., Project Manager. Responsible for evaluating the code compliance of design of tank equipment. Included tank-top fire suppression system, tank foundation temperature monitoring, and other systems to augment American Tank and Vessel, the tank manufacturer. Scope increased to include design build (or finish existing installations) of various tank external sub-systems. Specified, assembled, and installed tank temperature monitoring equipment, tank-top fire suppression system, and tank top fire detection system.
1/05 thru 4/05	CHI0325 CHI Engineering Portable Vaporizer Upgrade, Portsmouth, NH. Engineering design, specification, and supervise installation of various upgrades to make operating the portable vaporizer unit easier, so less personnel are involved. Added contactors to switch between land and portable power, fixed generator defective voltage regulator, upgrade VFD firmware and re-program, battery switch installed, updated procedures, and various other upgrades. Supported system startup in Dedham, MA temporary installation.
1/05 thru 2/06	OTB0501 Ocean Tug & Barge. Dominium Energy, Fairfax, VA. Chris Hosford, P.E., Project Manager. Preliminary design of an LNG barge to transport LNG around the coast of the United States. CHI was responsible for all systems excluding the custom barge platform. Piping and instrument diagrams, flow and level instrument specification, marine codes and regulations investigation, preliminary design of tanks and piping, fire protection system design, controls system design, marine and hazard area wiring methods considered. Preliminary electrical, controls, and instrumentation design and cost estimates of the cargo system for the LNG tanks.
3/05 thru 12/05	CHI0526 Portable & Ambient Maintenance. CHI Engineering Portable LNG Vaporizer and Pump Skid for lease. Upgraded controls and electrical to make field operation smoother and easier.
2/05 thru 7/06	PSE0507 Second LNG Tank. Gig Harbor LNG Facility. Puget Sound Energy, Bellevue, WA. Peter Dirksen, P.E., Project Manager. Electrical, controls, and fire protection design and specification to add a second 70,000gallon liquid natural gas tank and associated equipment. Provided scope of work and drawings.
2/05 thru 3/05	VNG0542 LPG Plant safety and Code Compliance Review, James City Propane/Air Plant, Williamsburg, VA. Virginia Natural Gas, Chesapeake, VA. Lynda Erdbrink, P.E., Project Manager. Reviewed plant for code and safety perspective and provided report to client so all problems were resolved. Examined vaporizers, buried LPG tanks, truck loading, and mixing and controls building. Substantial electrical, truck load, reliefs piping, and fire protection upgrades were required in the plant.
1/05 thru 7/05	VNG0543 Pivotal LPG Plant Safety and Code Compliance Review, Chesapeake, VA. Virginia Natural Gas Company, Chesapeake, VA. Lynda Erdbrink, P.E., Project Manager. Team reviewed plant as a third party immediately after the plant was built. Various problems and code compliance issues. Report issued.

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4/05 thru 7/06	VNG0544 Chesapeake Plant Upgrades. Virginia Natural Gas, 2500 Military Highway, Chesapeake, VA. Philip Bourne, P.E., Project Manager. Propane/Air peak shaving facility with buried and refrigerated tanks. Replaced plant controls system and fire protection system. Used existing conduit and wiring to the extent possible. Electrical, controls, fire protection system, and instrumentation design, specification, and documentation. Supervised electrical and fire protection contractors, up to 12 men, through plant commissioning. Started up plant.
12/05 thru 4/06	CNG0514 Connecticut Natural Gas Company, Rocky Hill LNG Facility, Rocky Hill, CT. LNG Pump D. Chris Hosford, P.E., Project Manager. Trouble shooting why submerged LNG pump worked fine originally, and suddenly operational problems occurred. Added 100HP pump current and other parameters on a display in the control room for diagnostics. Adjusted autotransformer soft starter settings to determine if that helped. Pump pressures and current used to protect the pump. Finally, found a way to start the pump manually, with all interlocks present. Determined the cause was that the client modified LNG tank recirculation piping following original pump startup. Nothing else was different. Adjusted procedures, priced options to resolve, and no other action at this time.
1/06	CNGX06001.00 PLC Firmware Upgrade & Instrument Calibrations, Connecticut Natural Gas Company, Rocky Hill, CT. Peter Dirksen, P.E., Project Manager. Complete annual instrument calibrations and provide reports. Upgrade programmable logic controller firmware to be compatible with new operator interface panel to monitor and alarm LNG pumps. Upgraded firmware, alarms in programs, tested, and documented.
1/06 thru 4/06	NUXX06002.00 Electrical Evaluation, Northern Utilities, West Road Offices, Portsmouth, NH. John Tirrell, P.E., Project Manager. Determined why a transformer burned up and designed circuits properly. A wider evaluation of the whole office and warehouse facility power distribution was conducted. Circuits were traced and loads measured. Motor control center and lighting panels circuits were documented and labeled. Final report addressed and provided solutions for code violations, overloaded circuits, and re-wiring needed to meet code with minimal changes.
1/06 thru 2/06	CNGX06002.00 LNG Pump D Testing & Evaluation, Connecticut Natural Gas Company, Rocky Hill, CT. Peter Dirksen, P.E., Project Manager. Use pump curves and test data to verify LNG pump is operating on its curve, why it trips offline during startup sometimes, and whether a discharge valve is necessary. Reviewed megger test results. Obtained quotations for valve and flow meter. Evaluated 3 different design options and generated estimates to install and commission a discharge valve and flow meter. Client decided to go without discharge valve and with manual pump starts using a manual valve, which takes 2 men. To monitor vaporizer emissions, obtained vaporizer fuel flow meter information, determined price and delivery for new meter indexes with analog/pulse outputs, and how to interface these to the plant controls system for emissions controls.
2/06 thru 4/06	SCGX06001.06 Electrical Area Classification, Southern Connecticut Gas Company, LNG Facility, Milford, CT. Peter Dirksen, P.E., Project Manager. Liquid natural gas liquefaction and storage facility. Studied plant tank, piping, and equipment and developed a complete set of area classification drawings. Measured and documented all vents, bleeds, flanges, equipment, locations, and heights.

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2/06 thru 7/06	AGTC06001.00 Phase 1 Cape Expansion, Mirant Power Meter Station. Duke Energy, Houston, TX. Steve Walker, Project Manager. Designed demolition changes at one meter station and designed a second meter station at the Mirant Power Station, Sandwich, MA. Provided design drawings and scope of work to disconnect and remove electrical and controls hardware at the Sagamore Meter Station. Moved building over to the Mirant Power Station and new meter station. Provided design drawings and scope of work so contractors could install the new meter station. Electrical power design, controls, instrumentation, grounding, cathodic protection stations, electrical area classification, etc. Supervised electricians during installation and commissioning.
3/06	CEFI06002.00 Contract Engineering-Pickens LNG Plant, Willis, TX. Clean Energy, Houston, TX. Chris Hosford, P.E., Project Manager. Examined specific aspects or systems in the plant for correct operation and code compliance. Tested amine tower for corrosion, tank level monitoring system found inoperative and repaired, tank foundation temperature monitoring and frost protection evaluated, NFPA 59A & 70 code violations identified, tank discretionary vent calibrated and tested, controls system deficiencies identified, and plant safety reviewed, and deficiencies noted.
8/06 thru 8/08	TEPCO0615.00 Texas Eastern Pipeline Products Company, Providence, RI. Philip Bourne, P.E., Project Manager. Marine propane terminal where ships offload liquid propane into a large, refrigerated tank and three truck loading stations load tractor trailers. Project was to design increased ship offloading pipeline flow by increasing liquid fill pipeline and add a vapor blower and vapor return pipeline to the ship. Designed all electrical and controls and programmed a dedicated ship offloading controller and touchscreen. Completed a load evaluation due to the addition of a 100HP blower. Assisted with process design. Specified all electrical including 480volt switchgear, dock vault and all hazardous area specific electrical hardware, blower controls, instrumentation, underground wiring, grounding, control panel with Simatic PLC and touchscreen, networking. Prepared complete electrical drawing package including One-Line changes, area classification, grounding, power and controls wiring, and network wiring. Wrote ship offloading procedures and verified. Commissioned, started up, and completed installation. Electrical contractor portion of project was about $350k.
8/06 thru 7/07	AGTC06001.01 Construction Management Phase 1 Cape Expansion, Mirant Power Meter Station, Duke Energy, Houston, TX. Steve Walker, Project Manager. Contractors' management and supervision through construction to project completion. Electrical contractor portion of project was approximately $70k excluding the electric service, which was another independent project.
10/06 thru 1/07	AGTC06001.02 Procurement Phase 1 Cape Expansion, Mirant Power Meter Station, Duke Energy, Houston, TX. Steve Walker, Project Manager. Specified and procured instrumentation, controls, and other hardware to meet a tight schedule and help the contractor meet his obligations.
6/06 thru 11/06	NPSI06001.00 Gas Pressure Reducing Skid, Northern Power Systems Inc., Barre, VT. John Tirrell, P.E., Project Manager. Natural gas pressure reducing and heating skid. Designed and specified all electrical hardware and instrumentation on the skid. Instrument data sheets generated, bill of materials for all conduit, wiring, and equipment, supervised construction, wired, and tested.

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2/07 thru 11/07	ORUI07002.00 Orange and Rockland, Buena Vista Meter Station Rebuild, Pearl River, NY. John Tirrell, P.E., Project Manager. Heater room rebuild project where design was for higher gas flow. Generated design drawings and specifications for new modular heaters, upgraded electric service, new odorant injection system, new generator set and automatic transfer switch, and all associated controls. Residential neighborhood limited noise, odorant venting, and exterior design had to look like a home.
3/07 thru 12/08	IMGX06001.00 Intermountain Gas Company, Rexburg LNG Facility, Rexburg, ID. Peter Dirksen, P.E., Project Manager. Started with a farmer's field and firm designed a $4M satellite peak-shaving LNG storage facility. Designed all plant and building electrical power and controls system. Provided a full set of drawings and specifications. Included transformer, single phase electric service, 480volt three phase generator with automatic transfer switch, building and plant ac power and dc controls wiring. Specified generator, transfer switch, electric service, plant and building lighting, power distribution panel, controls panel, fire protection system, tank vapor boil off electric heater, and instrumentation. Fire protection system included fire alarm panel, emergency shutdown pushbuttons, gas detectors, flame detectors, smoke detectors, and manual pull stations. Specified control panel and fire alarm panel integration. Specified and programmed plant controller and touchscreen. Supervised commissioning and startup of plant while commissioning plant electrical and control systems. Electrical contractor portion was $330k.
1/07 thru 6/07	CEFI06004.00 Clean Energy, Boron Consulting. Chris Hosford, P.E., Project Manager. LNG Plant including truck loading and liquefaction. Independent design review of a 2MW design package from another engineering firm. Generated questions and comments so construction phase will go smoother.
1/07 thru 9/07	CGVA07047.00 Columbia Gas of Virginia, Engineering Staunton Building. Philip Bourne, P.E., Project Manager. Examine existing propane/air plant building and design a replacement in the same spot. Designed all electric service, power distribution, and controls. Specified a complete 480 Volt Motor Control Center. Redesigned control room, mixing room, compressor room and provided a transition plan. Design integration into the rest of the plant, where there were tanks, instrumentation, heaters and other equipment. Contractor support during construction. Detailed design so that construction and startup went smoothly.
3/07 thru 4/07	PECO07014 Philadelphia Energy Company, East Greenville Meter Station Rebuild, East Greenville, PA. John Tirrell, P.E., Project Manager. Replaced a few valves, piping, and instrumentation. Developed wiring diagrams design, scope of work written, and contractor supervision provided.
4/07 thru 7/07	IMGX06002.00 Intermountain Gas Company, Rexburg LNG Facility, Rexburg, ID. Lynda Erdbrink, P.E., Project Manager. Assisted with electrical and controls design of portable vaporizer and LNG pump skid. This equipment had to function independently when at a remote site and when situated in the fixed LNG plant. Two emergency shutdown systems and interlocks were developed. Specified hardware and supervised shop fabrication of emergency shutdown stanchions.
4/07 thru 8/07	KEDX07077.00 National Grid, Grove Street Regulator Station Rebuild, Arlington, MA. Provided detailed electrical and controls design package to rebuild a decrepit regulator station. Included building rehab, electric service and heater specification, controls, and security system replacement. Design package included drawings and specifications package.

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6/07 thru 11/07	SCGX06001.05 Southern Connecticut Gas Company, Milford LNG Facility, Milford, CT. Peter Dirksen, P.E., Project Manager. Monitor and alarm LNG Pump Seals project. This was the first time that the Federal Energy Regulatory Commission (FERC) allowed a plant to monitor cryogenic temperature as a method to know if gas is leaking past the LNG pump seal instead of installing a high maintenance and high-cost gas detector system. This was a design change to the National Fire Protection Association (NFPA59A) Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG). Designed, specified equipment and wiring, and supervised installation of temperature sensors and connection to an integrated controller and operator interface in the control room. Connected interlocked alarms to the plant alarm panel.
6/07 thru 12/07	CEFI07005.00 Clean Energy Fuels, Inc., Boron LNG Facility, Boron, CA. Chris Hosford, P.E., Project Manager. Review compressor submittal drawings. Provided changes and corrections to Contractor. Reviewed one line design drawings from another engineering firm. Included medium and low voltage design. Independently developed a detailed load list based on plant operation and interlocks to size 2.5MW electric service to plant.
7/07 thru 10/07	VNGX07047.00 Virginia Natural Gas Company, James City Propane Air Plant, Controls Upgrade and Code Compliance Review. Lynda Erdbrink, P.E., Project Manager. Consulting on how to upgrade plant controls with company restrictions about what controls systems and software are acceptable. Preliminary design to determine scope of controls upgrade, define what local plant operators need, and what remote monitoring is required by Gas Control. Review former code compliance report and evaluate the plant that had many recent upgrades.
7/07 thru 10/07	CGVA07049.00 Columbia Gas of Virginia, Staunton P-A Fire Study. Doug Hanson, Project Manager. Assisted code evaluation of propane/air facility regarding NFPA58 and NFPA72 Fire Alarm Code.
8/07 thru 12/07	CGVA07047.01 Columbia Gas of Virginia, Extra Engineering Staunton Building. Lynda Erdbrink, P.E., Project Manager. Design responsibilities (scope) increased to include more design details. Specified plant electric service after generating a detailed load list. Replacement of the Fire Protection System added using limited existing buried cables. Evaluated contractor bids and provided feedback to client. Answered questions during construction.
12/2008	Passed Engineer in Training (EIT) exam on 12/16/2008, #5082
10/07 thru 5/08	IMGX06001.02 Intermountain Gas Company, Rexburg LNG Facility, Rexburg, ID. Peter Dirksen, P.E., Project Manager. Designed, specified, and built truck load skid controls. Designed, specified, purchased, and installed explosion-proof junction boxes, skid wiring, instrumentation, and gas detectors. Skid was ready to drop into place, connect, and startup once it arrived at the plant.
10/07 thru 5/08	IMGX06001.03 Intermountain Gas Company, Rexburg LNG Facility, Rexburg, ID. Peter Dirksen, P.E., Project Manager. Designed, specified, and built boil off skid electrical and controls to heat up cold gas off an LNG tank. Designed, specified, purchased, and installed explosion-proof junction boxes, skid wiring, instrumentation, 10KW electric boil off heater, valves, and gas detector. Skid was ready to drop into place, connect, and startup once it arrived at the plant. Simple thermocouple input, power to heater output, and status contacts to the plant control system.

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1/08 thru 6/08	ONQU07001.00 Onquest LNG Pump Cold Box, Boron LNG Facility, Boron, CA. Chris Hosford, P.E., Project Manager. Built a large skid with three LNG pumps, piping, various valves, and instrumentation. Designed, specified equipment and wiring, and supervised electricians while installing wiring. Checked out wiring to control system.
3/08 thru 10/08	ONQU07002.00 Onquest LNG Truck Loading Skid, Boron LNG Facility, Boron, CA. Chris Hosford, P.E., Project Manager. Built a very large skid to automatically load LNG tractor trailers. A large cryogenic skid was designed and built in our shop with valves, piping, cold box, instrumentation, and a small control room and control system. Designed and specified equipment and wiring, supervised electricians while installing wiring. I checked out wiring to control system and assisted with programming.
3/08	NGXX08008 National Grid, Cumberland LNG Facility, Cumberland, RI. John Lamb, P.E., Project Manager. Reviewed plant and provided area classification drawings. Generated a report for the plant noting NFPA70 & NFPA59A code violations and discrepancies that needed to be remedied.
3/08	NGXX08005 National Grid, Exeter LNG Facility, Exeter, RI. John Lamb, P.E., Project Manager. Reviewed plant and provided area classification drawings. Generated a report for the plant noting NFPA70 & NFPA59A code violations and discrepancies that needed to be remedied.
4/08 thru 1/09	PECO08021.00 Pennsylvania Energy Company, West Conshohocken LNG Facility, W. Conshohocken, PA. Peter Dirksen, P.E., Project Manager. Electric boil off heaters replacement. Replaced two 150KW electric heaters which heat boil off gas from the tank before the gas enters compressors. Designed, specified, and integrated complete skids into the plant. Equipment included large process heaters, automated valves, temperature controls, alarms, boil off compressor interlocks, and plant control system integration. Commissioned and started up the system. Monitoring and controls devices wired to the existing Emerson Delta-V control system.
5/08 thru 11/08	PNGT08009.00 Portland Natural Gas Transmission System, Portland, ME. Lynda Erdbrink, P.E., Project Manager. Install new remote telemetry units (RTUs) in five meter or meter/regulator stations. Provided drawings were not comprehensive or correct, so designed as we went along. Specified some equipment that was overlooked in the design. Supervised electrical contractor, determined how to get all equipment connected, decided where to install equipment to keep installation simple, calibrated and tested all instrumentation, and provided a good set of marked up drawings and cuts sheets for as-built project data books.
6/08	CNGX07021.00 Connecticut Natural Gas Company, Rocky Hill LNG Facility, Rocky Hill, CT. Peter Dirksen, P.E., Project Manager. Studied load list for whole plant and how the plant operates with respect to electrical load. After examining electric utility bills and utility load shedding contract, determined that soft starters are needed on vaporizer blowers. Provided a summary report to help the plant make decisions about how to implement.

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6/08 thru 12/08	SCGX08011.00 Southern Connecticut Gas Company, Milford LNG Plant, Milford, CT. Peter Dirksen, P.E., Project Manager. Designed and specified additional gas detectors to monitor equipment intakes and shut equipment down if gas is detected while alarming on the alarm panel. Detailed design drawings provided. Supervised electrical contractor.
6/08 thru 12/08	SCGX08010.00 Southern Connecticut Gas Company, Milford LNG Plant, Milford, CT. Peter Dirksen, P.E., Project Manager. Alarm Panel Upgrade/Replacement. Replaced an old alarm panel with a new programmable logic controller and touchscreen, which will become the main plant controller in the future. Specified, designed, wired, and programmed both the controller and touchscreen. Each alarm circuit had to be checked out and tested independently to equipment in the plant. Controller hardware was Allen Bradley ControlLogix, and the operator interface was a WonderWare Arista panel.
8/08 thru 12/08	SCGX07007.00 Southern Connecticut Gas Company, Milford LNG Facility, Milford, CT. Peter Dirksen, P.E., Project Manager. Tank Strap Repair/Foundation Heat Partial Rebuild. Designed foundation nitrogen purge system to improve the foundation heat trace system. Replace exterior conduits when doing other work on tank foundations. Tasks were design and contractor supervision.
8/08 thru 10/08	JAXL008001.00 Jackson Labs, Bar Harbor, ME. Peter Dirksen, P.E., Project Manager. Preliminary electrical, controls, and fire protection design and cost proposal for a base load LNG facility.
9/08 thru 12/08	IMGX06001.04 Intermountain Gas Company, Rexburg LNG Facility, Rexburg, ID. Lynda Erdbrink, P.E., Project Manager. Designed specified, networked, and programmed plant controller and touchscreen operator interface. Integrated plant functions including controlling tank valves, truck loading, LNG pumps, tank boil off, and vaporization by integrating SCADAPack control panel and Maple Systems touchscreen. Simplex Fire Alarm Panel signals used to control plant functions and interlocks. Commissioned and started up plant.
12/08 thru 6/09	SCGX07006.00 Southern Connecticut Gas Company, Milford LNG Facility, Milford, CT. John Lamb, P.E., Project Manager. Serviced and calibrated LNG tank level gauge and provided report with inspection and calibration data.

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2009 THRU 2015	WALDRON ENGINEERING AND CONSTRUCTION, INC., EXETER, NH
	TITLE: ELECTRICAL AND CONTROLS ENGINEER
4/09 thru 6/10	159 One Bryant Park Cogeneration Project, New York, NY. Responsible for finishing the design associated with the installation of a 4.5MW recuperated gas turbine, duct-fired heat recovery boiler and a 400-ton absorption chiller. Cogen plant was designed integral to the Bank of America Tower, a high-rise office tower located at Bryant Park in Manhattan and supplies the building's heating energy needs, plus a portion of its electrical and cooling energy requirements. Focused on control systems, safety systems, gas detection, supporting fire responder requirements around fire protection and suppression, and commissioning.
6/09 thru 9/09	201 Zegen, Attleboro, MA. Biomass-fueled molten copper bath gasifier feasibility and cost. Very high temperature process, so specialized equipment was specified. Evaluated existing plant. Generated a control architecture drawing. Specified plant control system, instruments, control valves, and other equipment. Fire protection system drawings and specifications designed. Obtained quotations for all specified equipment. Delivered a final report with costs and options.
4/10 thru 6/11	194 Basell Polyolefins Power Plant, Westlake, LA. Project consisted of a 15Mwe Solar Titan 130 combustion turbine generator, two waste heat boilers, two firetube boilers, and various auxiliaries. Role was design, submittal reviews, construction support, commissioning, and startup. Re-designed emergency-stop circuits, specified equipment, provided installation details, purchased various instruments and specialized equipment, resolved field installation problem where a level measurement column interfered with an installed boiler, specified and procured telephone system, and responded to field requests for information (RFIs). Supervised efforts to examine four boilers and a heat recovery steam generator that were provided without data sheets, and provided a complete package of instrument and valve data sheets, which included all instruments, control valves, pressure reliefs, sensors, gauges, etc.
7/09 thru 1/11	212 Vermont Public Power Supply Authority, Swanton, VT. Instrumentation and controls engineer responsible for the design and installation of two General Electric Frame 5 simple cycle peaking combustion turbines that utilize biodiesel and diesel as fuel sources. The 40MW plant includes a complete de-mineralized water storage and forwarding system for boiler feed water injection and dual-fuel storage and handling systems.
5/09 thru 12/10	220 Proctor & Gamble (Gillette), Boston, MA. Instrumentation and controls engineer for a 7.5MWe gas-fired cogeneration plant expansion. Designed and specified plant controls architecture, loop drawings, instrumentation and control valves, installation details, programmable controllers, redesigned interface to various existing boilers and chillers, gas detection system, fire protection and suppression system, and designed the continuous emissions and monitoring system. Major equipment designs included gas compressor, combustion turbine, HRSG, switchgear, and auxiliaries. Bid and construction design packages were delivered, reviewed, verified, and coordinated with vendors for major equipment, control panels, and control system components and equipment.
12/10	Passed NH professional engineer (PE) exam 12/29/2010 and registered license #13331
8/09 thru 9/09	187.5/6 Woodstone Energy-end user was Proctor & Gamble (Gillette south Boston manufacturing Facility, South Boston, MA. Deaerator Replacement detailed design followed by deaerator construction and commissioning. Detailed controls design included loop diagrams, I/O List, instrument and valve data

	specification sheets, equipment procurement, process description, hired systems integrator to complete the work, and commissioning. Worked directly with an electrician to support field installation.
4/10 thru 9/10	244.01 Ampersand Gilman Biomass, Gilman, NH. Simple cycle 12.5 Mwe power plant proposed to be rebuilt where a hydroelectric plant formerly resided. Proposal and costing tasks completed. Worked with control systems integration vendors, instrumentation and control valve suppliers, desuperheater bypass control valve sized for a maximum of 115 k lbs/hour steam was a challenge. Assisted with proposal and cost package preparation.
9/11 thru 1/12	220 Proctor & Gamble (Gillette), Boston, MA. Completed instrumentation and controls systems field commissioning for a 7.5MWe turbine, 100,000 lb/hr, 850 psig fired heat recovery steam generator (HRSG), 800hp gas compressor, continuous emissions and monitoring system (CEMS), and all associated auxiliary equipment. Supervised and coordinated controls, electrical, and CEMS contractor scheduling, testing, and trouble-shooting efforts. Trained operators on new plant operation and capabilities. Developed system training plans that included system overview, incorporated equipment startup info within the system startup, normal operation and various modes of operation in accordance with design requirements and performance corrections during various operating conditions. Conducted classroom operator training to review the overall plant operation and familiarized the operators regarding equipment and system operation per design intent. Lead in hands-on equipment and plant startup and operation training including basic troubleshooting systems and equipment malfunctions. Various workarounds were necessary to allow the plant to operate through construction and commissioning. Control system was based on redundant Allen Bradley ControlLogix controllers, Foundation FieldBus communications, redundant ControlNet networks, WonderWare SCADA and PI Historian.
8/09 thru 12/10	71.62 Harvard University, Blackstone Steam & Power Station, Cambridge, MA. Controls engineering designing replacement Boiler 11 and 12 burner management system and combustion controls system. Upgraded burners, fuel trains, and controls for dual-fuel operation and to meet the latest code and safety requirements. Specified and supervised adding operator interface screens on existing plant control system. Role was design, code review, code enforcement support, contractor submittal reviews, coordinate contractor work and construction support. Controls engineer for variable frequency drive upgrades to three large boiler combustion fan systems to control combustion air, limit excess air, and provide more efficient and precise control of boilers.
5/10 thru 6/10	158.13 AstraZeneca Facility Power Plant Upgrade, Waltham, MA. Flow and Electrical Energy Metering Project. Specified natural gas and water flow meters, energy meters, and coordinated with electrical power metering design. Compared various flow meter technologies to determine the highest accuracy and best-bang-for-the-buck. Provided information to client to support decisions and procurement. Specified approximately 32 electric meters and/or panels. Created data sheets, instrument/meter location plan, and equipment specifications. Successful flow meter bidder was Emerson-Micro Motion instrumentation.
2/10 thru 7/11	206.02/255 Duke Energy/Conoco Phillips, Gaines Compressed Air Energy Storage Demonstration Project, Gaines, TX. Design, procure, and build type project. As instrumentation and controls engineer, designed and procured instrumentation, control valves, and control system for a prototype demonstration project. A proprietary process and highly efficient, electrically driven, compressor-controlled design to store compressed air in a formerly natural gas underground cavern when green energy, such as solar or wind power, is available. Another project, which had already been proven, was to expand compressed air through a turbo-expander/generator to produce electricity. The goal was to show green energy generation and storage can be used to create a power plant with baseline power output 24/7. Specified and procured Beckhoff KLx data acquisition hardware, InduSoft Human Machine Interface software, TwinCat development SCADA software, valves, instruments, and other hardware. Design and specification responsibilities included controls system, instrumentation, control valves, gas detection and supported design of fire protection system. System comprised of central plant controller, operator

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	interface, and emergency stop system. Generated loop diagrams, controls architecture, I/O List, conductor and cable schedule, installation details, hardware and software specifications, process controls descriptions. Obtained costs for equipment and procured instrumentation, control valves, and other hardware. Reviewed fire alarm riser diagrams. Coordinated integration of devices with the control system contractor. Supervised construction and commissioning of control system and electrical contractor setting up and testing medium voltage switchgear.
4/09 thru 1/12	175.06 Vineland Municipal Electric Utility/Howard M. Down Generating Station, Vineland, NJ. Controls, fire and emissions engineer for a 64MW peaking power plant utilizing a dual-fuel Rolls Royce Trent turbine. Design and specification of plant distributed control system, video security and access control system, digital and voice communications systems, continuous emissions monitoring system, water supply system, aqueous ammonia, and fuel oil storage and forwarding controls, gas compressor controls, special hazards safety systems, and other auxiliary systems. Owner's engineer assisting with equipment vendor submittal reviews and answering contractor requests for information during construction. Supervised Factory Acceptance Test (FAT) of the entire control system for the 64MW combustion turbine, which included trouble-shooting circuits and devices. Designed a Hybrid DCS based on the Emerson Delta-V control system which was integrated with Allen Bradley ControlLogix skid controllers. SCADA and Historian software specified as competitive bid.
4/09 thru 1/12	226 University of Massachusetts Medical School, Worcester, MA. Designed controls, fire protection and suppression, and emissions for a power plant upgrade at the UMass medical facility power plant. Included design of a 7.5MWe gas/fuel oil turbine, fired heat recovery steam generator, control of a 4,000ton electric chiller, gas compressor, and many auxiliary systems. Design included a plant-wide control system upgrade. Project was a challenge, since all modifications were implemented while the plant continued to operate, and programmable controllers were various vintages making compatibility difficult. Allen Bradley ControlLogix used for new controller systems, Wonderware InTouch SCADA software, Wonderware PI Historian, controller networks upgraded from serial communications to redundant Allen Bradley ControlNet, and ETAP control and load shedding were utilized to complete the project.
6/09 thru 7/09	110 Newington Energy Power Plant, Newington, NH. Designed a reliable communications system to replace a faulty one. Fiber optic link between two points designed, equipment specified and procured, and provided instructions on how to configure and install.
6/11 thru 12/12	245 Columbia University, New York, NY. Lead instrumentation and controls engineer. Project involved removal of four boilers and replace with a combustion turbine, heat recovery steam generator, gas compressor, and other auxiliary equipment to provide a much more efficient power plant. Demolition design work to remove existing boilers and chillers, reuse/reconnect to existing system where possible, and interface with other existing power plant equipment. Multiple controls system control rooms were supported. Detailed design package generated in preparation for construction.
10/10 thru 11/13	187.13 Proctor & Gamble (Gillette) World Headquarters Electrical Area Classification Study, Boston, MA. Controls Engineer. South Boston manufacturing facility areas examined for hazardous liquids, gases, and dusts to determine code compliance of existing facility and wiring methods. Evaluated areas containing substances such as natural gas, hydrogen, No.2 fuel oil, lube oils, and various other materials. The hydrogen storage and distribution facilities were the primary focus of this safety evaluation. Performed on-site surveys, requested information, examined NFPA 70 Electrical, NFPA497, and NFPA499 to develop area classifications. After defining electrically hazardous areas, evaluated equipment in those areas and provided practical solutions. Reported findings and provided two and three-dimensional drawing views in a working report. Client implemented all recommendations to improve safety.

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2/11 thru 6/11	262.01 Burges Biopower, Berlin, NH. The client was Cate Street Capital, Portsmouth, NH. Owner's engineer for a 70MW biomass plant. An existing design consisting of a bubbling fluidized-bed boiler with a condensing steam turbine generator and other auxiliaries was evaluated primarily for cost. Technical omissions or deficiencies were identified. In an oversight role, evaluated design and checked to verify all necessary equipment was included in the project and priced. Obtained cost estimates for a distributed control system (DCS), valves, instrumentation, continuous emissions monitoring system (CEMS), wood fuel handling system, fire protection systems, ammonia, fuel oil, and boiler dry sorbent truck stations, storage, and forwarding, selective catalyst reduction (SCR), and various other auxiliary equipment. All findings were provided to the client.
4/11 thru 9/13	272/280 Montclair State University Cogeneration Plant, Montclair, NJ. The client was DCO Energy, Mays Landing, NJ. Lead controls engineer designing and specifying a new power plant including a dual-fuel 7.5MWe base load turbine, fired heat recovery steam generator 60,000lbs/hr, steam-driven chillers, two fire-tube boilers, and various auxiliary systems. Allen Bradley ControlLogix control system designed to monitor and control the primary campus distribution systems for steam and chilled water. Instrumentation and controls design of entire plant plus primary side connections to campus buildings for chilled water and steam controls. Responsible for performance-based fire alarm and suppression systems design. Coordination with mechanical and electrical power/switchgear systems.
9/11 thru 2/12	218.04 NRG Solutia, Indian Orchard, Combined Heat & Power (CHP) Study. Evaluated installation of a 15MWe Solar Titan 130 with an unfired heat recovery steam generator (HRSG), boiler modifications, piping and other plant equipment modifications. Supervised staff engineers during the preliminary cost opinion design phase.
2012	284.01 DRS Test Facility, Fitchburg, MA. Study to develop and report a cost and technical opinion to renovate an existing facility to a custom steam turbine test facility. Conceptual design of facility that would include a 250,000lbs/hr gas-fired boiler, load banks, cooling towers, piping, de-superheater, valves, continuous emissions monitoring system (CEMS), 13.2kV and 480V power distribution equipment, integrated control system, cranes for rigging in and out 50MW steam turbine generators for testing. Supervised staff engineer and checked work though out the project. Provided a controls architecture, fire protection systems cost, control systems cost, and other equipment estimates.
9/11 thru 2012	288.01 DataGRYD, 60 Hudson Street, New York, NY. Combined heat and power plant (CHP) design project to install multiple 3MW diesel generators, dual-fueled combustion turbine generators (CTGs), heat recovery steam generators (HRSGs), packaged gas compressors, exhaust-fired absorption chillers, cooling towers, electrical generation and distribution equipment, integrated control system, integrated fire protection and suppression system, and other systems and auxiliaries in a 24-story building in Manhattan. The CHP plant supports multiple floors of data centers. Supervised staff engineers and designers throughout the detailed design process. Engaged in tasks such as code investigations, site evaluations, utility connections, permit support, and general plant control, operation, and design in a highly automated plant with equipment distributed over 26 floors.
10/11 thru 4/12	287.02 Yale CPP CHP Re-Power Study, Yale University, New Haven, CT. Evaluated power plant existing control system and determined obsolescent. Considered pros and cons of options based of potential plant equipment upgrades based on most effective control system migration paths. Published report and presented briefing with findings for discussion.
2012	291 Trinity College Boilers Energy Efficiency Study, Hartford, CT. Evaluated two boilers and how to increase energy efficiency of the system. Proposed variable frequency drives (VFDs) to control combustion air supply, oxygen stack monitoring, and burner management controls to reduce power consumption and increase combustion efficiency. Delivered preliminary drawings and description of modifications with a cost estimate.

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2/11 thru 2/14	0000 Neptune Wave Energy Prototype Design, LLC, Dallas, TX. Controls engineering design of a prototype ocean buoy for the purpose of using wave movement to generate power. Proprietary design specified based on an electric generator, Remote Telemetry Unit controller, radio modems, rotary encoders, accelerometers, low power instrumentation, salty air environment, panel installation and layout, and power use calculations. The project equipment was later built and tested near Isle of Shoals, Maine to verify the concept works.
1/13 thru 11/14	Alstom Power, Inc. Power Plant Laboratories Relocation, Windsor, CT. Electrical power, controls and fire lead discipline engineer. Supervised design specifications and drawings to move a mixed commercial/industrial combustion research facility. Large towers, silos, specialized machines, machine labs, coal pulverizer, fluidized bed boiler, switchgear, motor control centers, control system and fire systems all relocated. Some systems re-designed or specified for procurement. Supported contractors through construction.
2013	71.63 Harvard Steam Metering, Cambridge, MA. Provided instrumentation design services to install temperature and flow meters in existing steam distribution piping to measure and definitively determine the accuracy of temperature elements in thermowells versus strapped onto the outside of the pipe under insulation. This pilot data-gathering project was done to determine how many other steam-line flow meters will be modified around the Harvard University campus. Provided instrumentation installation details, specified equipment, reviewed vendor submittals, and supported installation.
10/12 thru 8/13	261 James J. Peters Veterans Administration Medical Center, Bronx, NY. Lead controls engineer coordinated with a local fire engineer for a combined heat and power plant upgrade design. Project included single boiler removal and design of a 3.5MWe combustion turbine, heat recovery steam generator, gas compressor, and other auxiliary equipment supporting the major equipment. Preliminary design packages prepared to meet VA specific requirements.
2013	266 Simmons College Boilers Replacement, Boston, MA. Construction direction, oversight, and supervision in a multi-phase project. Five boilers, deaerator, combustion air system, and various auxiliary systems were replaced to modernize the campus steam supply system. Reviewed existing facility, performed design, reviewed contractor submittals, and supported other aspects of the project to ensure the campus had no down-time, the installation is efficient, meets code, and works properly. A big challenge was squeezing in equipment into a small space.
6/13 thru 8/15	302 Braintree Electric Light Department, Braintree, MA. Potter II Power Station Repowering Study. Considered multiple plant design options and costs to arrive at the optimum design. Challenges included determining transmission lines ratings connected to the plant to size the power plant. Study led to the Watson III design project. Watson III project encompassed detailed design of a 64 MW combustion turbine generator package provided by Rolls Royce in parallel with two other existing generators, generator step up transformer and connection to the 115KV switchyard. Specified 13.8 KV and 480volt switchgear, 4160volt electric gas compressor, and auxiliary equipment. Complete construction drawings and procurement specifications developed.
2/14 thru 11/14	University of Toronto, Toronto, Canada. Lead instrumentation and controls engineer. New research facility to test combustion of various fuels. Storage, distribution, and combustion facilities were designed for various combustible liquids and gases including hydrogen, natural gas, propane, fuel oils, and other fuels that can be connected via pressurized bottles to a monitored combustion chamber. One-of-a-kind combustion testing facility design, code compliance, safety, and operation with minimal maintenance. A preliminary design package and pricing was delivered.

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12/14 thru 9/15	Capital Area Project, Hartford, CT. Lead electrical, controls, and fire engineer. Client was Source One working for the local utility. Feasibility study and preliminary design to remove existing equipment and install new equipment to provide steam and chilled water to capital buildings in downtown Hartford.
5/14 thru 12/14	Yale University, New Haven, CT. Vista Switch Project. Lead electrical engineer. Medium voltage feeds to university power plant reconfigured, including interlocks and protections. Used ETAP design and simulation software. Detailed design package delivered.
1/15 thru 10/15	Milford Hospital, Milford, MA. Supplemental Power Project. Lead electrical and controls engineer. Project was to utilize an 810KW gas-fired Caterpillar engineer generator. Designed and specified switchgear, protections, and control into a design package in preparation for construction. Design studies done using ETAP software. Commissioning and training plans developed and implemented.
12/14 thru 3/15	Massachusetts Bay Transportation Authority (MBTA) Charlestown Hydrogen Refueling Station for Buses-Design Code & Safety Evaluation, Charlestown, MA. Reviewed Nuvera design of an on-site Steam Methane Reformation (SMR), purification, compression, and refueling station to refill fuel cell-powered buses with compressed hydrogen. Reviewed design and applicable codes for compliance and safety. Reviewed all aspects of the design including piping and instrument diagrams, equipment layout, safety measures, control and safety systems, barriers, interlocks, electrical hazardous areas definition, gas detection systems, and fire protection system. Provided red-lined drawings and a report with findings prior to the construction phase. Project was built and completed in 2016.
5/14 thru 11/15	314 Twin Rivers Technologies, Quincy, MA. Lead electrical power, controls, and fire engineer. Plant processes oleo into usable products. Design of a combined heat and power plant with a 2MW Opra combustion turbine, and 800psig, 570 degrees Fahrenheit, 75,000 pounds/hour fired heat recovery steam generator, and auxiliary equipment. Power design included 13.8kV and 480volt switchgear. Used ETAP design and simulation software. Project implemented using Allen Bradley ControlLogix PLCs and existing plant SCADA software. Electrical supplemental generation where the turbine generator operates in parallel with the electric utility and plant island if the utility drops off. Worked with electric utility to meet requirements for project efficiency incentives and financing. Process hazard analysis completed to support client FM Global insurance requirement. Detailed design package generated in preparation for construction. Included transformer spec, lightning protection, grounding, electric power design, and controls system design. Coordination with mechanical and electrical equipment was completed, especially regarding specifications for the combustion turbine, gas compressor, heat recovery steam generator, electrical switchgear interlocks, and integrated controls. Commissioning and training plans developed and implemented. This was a challenging project due to physical space and aging plant control system constraints.
9/13 thru 2/15	067 Genor Power Plant Upgrade, Guatemala City, Guatemala. Lead Controls and Fire Engineer. This was a prototype project. Organic Rankine Cycle utilized free waste heat from four 10MW diesel engines to generate electricity. Controls design of turbo-expander and super-heater, Modicon M340 plant controls system, Wonderware InTouch SCADA and Historian software, safety systems, fire protection systems, instrumentation, and valves. Supervising controls design including controls architecture, Inputs/Outputs List, instrument and control valve specification sheets, electric panels design, hazardous areas design, intrinsic safety design, gas detection systems, soft and hard safety interlocks, and detailed design specifications and drawings. The process descriptions were very important and challenging due the prototype, complexity of process control, language barrier, and culture differences. Also completed design of a propane truck unload station that included code review, controls and fire protection design, detailed drawings, specs, and operating procedures.

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2015 Thru Present	NOWLAND SERVICES, PLLC, WOLFEBORO, NH
	TITLE: ELECTRICAL, CONTROLS, AND ENERGY ENGINEER
11/15 thru 1/16	SCGX14036.00 South Jersey Gas Liquefaction Project, McKee City, Hamilton TP, NJ for CHI Engineering Services, Inc., Portsmouth, NH. Electrical engineer reviewing drawings, one-line diagram, specifications, performed conduit fill calculations, load calculations, protection coordination, short-circuit protection, providing feedback on medium and low voltage design, and stamped construction electrical and controls drawings. 15KV, 12.5KV, 4.16KV, 480V, and 208Y/120V design including a 4.16KV variable frequency drive for nitrogen compressor. Specified motor control center with 10 sections.
10/16	Devaney Energy Propane Storage Facility, Bridgewater, MA. Working for client Crown Energy Solutions, Windham, NH. Three 30,000gallon propane storage tanks under pressure test. Witnessed before and after testing to verify tanks held hydrostatic pressure and inspected tanks, piping, and facility for whether it meets codes. Verified test instruments and conditions.
11/16	Portsmouth Naval Shipyard, Portsmouth, NH. Client: AECm Architects and Engineers, Newmarket, NH. Upgraded the building 342 heating ventilation and cooling (HVAC) system. Completed a state, national and navy electrical code review. Provided stamped electrical drawings to support installation contractor.
4/16 thru 1/17	Concord Steam, Concord, NH. Evaluated electrical systems in the power plant to verify that the plant was electrically safe. The city Fire Marshall required an evaluation after a fire to verify work had resolved the damaged switchgear and equipment, and that the plant was safe to electrically energize. Inspected all three-phase medium and low voltage equipment and wiring in a biomass power plant that has been operating since the mid-1800s. Equipment operating at 13.8kV, 2.4kV, and 480volts in the facility. Considered switchgear, steam turbine generators, motor control centers, pumps, fans, wireways, and conductors. Reviewed equipment age, condition, completed code investigations, and wrote a summary report with findings. There were no drawings of this facility.
10/16 thru 1/17	Energy audits for client EMG Corp, Owings Mills, MD (now Bureau Veritas). Working for client Marshall's. Evaluated two stores in New York City. Inspected and wrote a report evaluating building leased space, building envelope, windows, doors, HVAC, electrical systems, control systems, fire protection, escalators, utilities, store hours, occupancy, and lighting. Published reports with energy conservation measures outlined and prioritized for energy savings and cost.
11/17 thru 12/17	Facility Condition Assessments for client EMG Corp., Owings Mills, MD (now Bureau Veritas). Working for client Dedham Schools, Dedham, MA. Evaluated four schools for facilities, equipment, building envelope, heating and cooling systems, utilities, foundations, roofs, windows, doors, insulation, construction, age and condition. Published reports with maintenance information when specific systems need attention and included an accompanying cost estimate. Provides owners a clear picture of what is needed and a cost schedule to continue to operate and maintain facilities.

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8/18 thru 9/18	XNG Express Natural Gas, LLC, Andover, MA. Inspected truck loading facility in Montrose, PA that had been hit by lightning. Gas compressors' controllers were damaged and needed repair and reprogramming. Used Rockwell Software Allen Bradley RSLogix5000 programming software to access networked controllers and determine controller's status. Provided lightning protection advice and cost to complete a design study to protect facility equipment moving forward.
9/18 thru 9/20	IMS Expert Services, Pensacola, FL. Oceanus Seafood, LLC v. Aquaculture Enterprises, Inc. v. Any Time Embeds, Inc. D/B/A Ironrock Commercial Construction, et al. Expert evaluation regarding electrical and control systems installation at a Florida commercial aquaculture facility. Inspected and evaluated facility and wrote a report summarizing findings. Discussed findings with attorney and client (plaintiff). Reviewed depositions. Case settled.
6/19 thru 12/19	AECm Architects, Newmarket, NH. Bedford Veterans Administration Medical Center upgrades. Owner's engineer. Electrical engineering and controls design and support of project to complete the second floor of the Mental Health Ward. Power distribution, normal versus emergency bus design and code compliance, control systems, communications, lighting, and resolve unfinished older projects. Site evaluation. Generated a Basis of Design to guide the electrical design firm in detailed design.
10/19	EMG Corp. (Now Bureau Veritas) Support marketing efforts in Town of Medway, MA regarding facilities conditions audits. Attend pre-bid meeting and provide local support for the marketing effort.
12/19	NeoMatrix, Inc., Portsmouth, NH. Evaluated a cleaning apparatus regarding hazardous area and safety. The system included acetone and isopropyl alcohol hazardous substances at various temperatures. Summarized findings and marked up drawings which helped client make educated decisions.
11/19 thru 11/20	AddyHart, Inc. Chicago, IL. Gebo Cermex USA, Inc. et al v. ACMI USA, Inc. et al. Expert witness on an international patent case. Evaluated patent and similar patents, electrical power and control systems design, PLC and HMI software for automated bottling plant process. Provided technical expertise, report and client (plaintiff) support as necessary. Plant automation software was the primary challenge to understand leading to the report. Case settled days after a draft expert report was filed.
5/20 thru 6/20	The Children's Center, Wolfeboro, NH. Partial energy audit and evaluation of HVAC systems for third floor offices. Engaged in onsite inspections, client meetings, wrote a report, coordinated with contractors, and issued report. Knowledge made client decisions easy. Pro bono project to support a local non-profit business.
2/20 thru 4/20	AddyHart, Inc. Chicago, IL. Gebo Cermex USA, Inc. et al v. Alliance. Expert witness on a national patent dispute case. Evaluating PLC and HMI software for commercial bottling processes. Provided insight into system design and programming to the client (plaintiff) and supported as needed. Case settled.
2/20 thru 9/23	Copper Cannon Camp, Bethlehem, NH. Pro bono design of a hydroelectric system for an inner-city kids' summer camp. Two designs are possible based on-site conditions. Client directed me to focus on a water wheel because it is a great demonstration system and teaching tool. No reliable hydroelectric generators are available for the pico-hydro water flow and head needed.
12/20	Novo Nordisk, Lebanon, NH through Dickson Data, Inc., Addison, IL. Monitoring and controls system of a hazardous area due to flammable gases and liquids storage. Completed intrinsically safe circuit design, integrity verification, and PE stamped drawings.

1/21 thru 3/21	Nowland Services, PLLC. Specified, procured, installed, and configured office ethernet integrated network, computers, and integrated Wi-Fi systems.
4/21 thru 9/22	Smith Turley, St. Roberts, MI. Earth-To-Go & P&L Coatings v. City of Richland case 18CM-CC00072 . Acted as defendant expert and evaluated custom manufacturing machines to determine machine condition including financial and/or economical obsolescence. Earth-To-Go manufactured biodegradable plates and bowls. Equipment was damaged when the building, owned by the town, leaked and damaged manufacturing equipment. Focused on electrical systems and controls hardware and software, which was primarily Allen Bradley and Rockwell Automation controls equipment and software. Case transitioned over to Dan Hunkins at Brown & James Law Firm, St. Louis, MO and transitioned again to Dan Hunkins at Watters Wolf Bub Hansmann. Completed a preliminary evaluation of damages. Developed a spreadsheet with the condition and obsolescence status of equipment, which was not published. Plaintiff did not retain an expert to evaluate damages and had no basis for damages. I was not deposed and avoided trial to prevent Plaintiff from using my testimony to develop their damages case.
5/21 thru 3/22	Beaupre Law, PLLC, Tim Beaupre, Esq, Dover, NH. Case: Allen Demers and Tina Demers v. Central Maine Power Company. Electrocution case to evaluate whether the electrical utility failed to protect a broadband company employee working on the lower wiring on a utility power pole. Worked to determine how the incident happened and what codes may have been violated. Prior to filing a report, the case settled.
6/21	CHI Engineering Services, Inc./NV5, Portsmouth, NH. John Tirrell, Project Manager. Westhampton Meter and Regulator Station Upgrade, Westhampton Township, NJ. Review Public Service Electric and Gas (PSE&G) drawing set for gas facility electrical and controls systems design, perform over-current and short-circuit calculations, verify code compliance, and provide professional engineer stamp on 37 sheet drawing package.
7/21 thru 8/21	Blue Planet Funding, LLC, William Hect, Glen Ridge, NJ. 1MW Solar System Conceptual Design to be built in Franklin, NH. Net metering project behind the meter to be connected to Eversource. Open field of ground-mounted fixed solar panels to connect to the utility using medium voltage. Completed initial DC and AC design and delivered One-Line Drawing in preparation for utility application. Utilized a grid-forming inverter that did not require synchronization alignment and synchronizing/switching equipment.
4/22 thru 8/22	Plaintiffs v. Western International Gas & Cylinders, Inc. and Matheson Tri-Gas, Inc., et al., client is Paul Kerlin and Sam Davison, Greenberg Traurig representing the defendant through IMS Expert Services, Inc. District Court of Harris County, TX, 11th Judicial District, case 2021-15294. Representing Defendant. This was a large case that was coordinated as a Multi District Litigation case, due to the many plaintiffs and defendants. A propylene explosion occurred in January 2020 in Houston where coatings were applied to specific piping components or parts using robots. Specialized in telemetry, process, and safety evaluations portions of the case. Case resulted in a favorable settlement for the defendant.
7/22 thru 8/22	CHI Energy Services, Inc., Chris Hosford. Project: Preload, Charlton, MA included design of an electrical heat trace foundation heating system for installation under a new Liquid Natural Gas (LNG) stationary insulated tank maintained at cryogenic temperatures below -260 degrees Fahrenheit. The 86foot diameter concrete circular foundation must be maintained above freezing year-round with a highly reliable foundation heating system. Design and specification of system completed, and professional engineer stamped drawings.
4/22 thru 1/24	XTO Energy, Inc.- a wholly owned subsidiary of ExxonMobil Corp. Jeremy Santiago Bara v. XTO Energy, Inc. and Danny Gonzalez, client was John Anderson at Holland & Hart working for Defendant. First Judicial District, Santa Fe County, New Mexico. Case D-506-CV-2021-00482. Case involved worker electrical shocking injuries from a power line. Expert electrical engineer focusing on electric power work and safety. Case settled.

10/22 thru 1/24	Jean Perrot, Director at Celduc Transfo, Sorbiers, France 42290. Project was design validation of a 14MVA 25KV/3.3kV with two secondaries transformer for the Magnolia Power Plant, Plaquemine, LA, USA, a Kindle Energy combined-cycle project. Transformer powers all power plant combustion turbine auxiliary systems. The power plant was based on a General Electric 7HA.03 turbine that was fueled with natural gas or natural gas and up to 50% hydrogen. Transformer design and fabrication was completed by Celduc Transfo, General Electric required design validation, and validation was provided by Nowland Services, PLLC. Scope included obtaining a Professional Engineer license by comity in Louisiana, register the Firm in Louisiana, review design specifications and pertinent documents to ensure transformer meets Louisiana and US requirements, interface with and support design team throughout the design process, attend Factory Acceptance Test (FAT), and provide PE stamp on final drawings. Transformer was built and delivered to Louisiana.
1/23 thru 4/23	Robert Cusick, Residential owner, Enfield, NH. Solar system inspection, evaluation, and design services to document and then modify an existing hybrid residential solar-augmented electrical system with an 18KW generator and automatic transfer switch. Project was too complicated for an electrician or the solar installation contractor to complete. No documentation, so the first step was to document the existing design and settings. A final report evaluated and provided valuable information to the client to facilitate an educated decision about how to better meet client needs, support electrician installation, and possibly a solar contractor to proceed safely to a final solution.
4/23 thru 8/23	Jay Gamble, PE, PMP at AWCO Engineering and Technical Solutions, LLC, Barrington, NH. Electrical and controls design project of a Liberty Utilities natural gas facility Berlin Gate Station, Berlin, NH. Added a second pipeline feed with parallel meter runs while updating heaters, instrumentation, and controls. Power distribution design, load list created, sized, and specified a backup generator set, pipeline instruments, control valves, updated electrical area classification drawings, and fit all equipment into the existing and tight building footprint. Control of lead/lag heaters with automatic fail over was a challenge. Designed controls system interface to Liberty Utilities and Portland Natural Gas and Transmission System (PNGTS) Remote Telemetry Units (RTUs). Completed and stamped design drawings.
7/23 thru 8/23	Gregory Heine, Claims Supervisor at Concord Group Insurance, Bedford, NH. Worked with Daniel Roy, CFI, CFEI Fire and Explosion Investigations, Inc. Monmouth, ME and Marie Cheung-Truslow, Esq., Boston, MA. Evaluated lightning strike(s) weeks after they occurred and whether they caused a power surge that blew out a propane gas regulator, caught fire, and resulted in significant damage to a private home. The preliminary evaluation was completed at the pre-case legal phase. There were no obvious electrical or safety code violations by installation contractors. Potential case was dropped.
12/23 thru Present	Marc Brotman, Esq. at Szaferman, Lakind, Blumstein & Blader, P.C., Lawrenceville, NJ. Baker-Corbo-Wood v. Kimco Realty, Socore Energy, LLC, Lighton Electric, Inc. et al. Superior Court of New Jersey Law Division-Monmouth County. The case involves a photovoltaic solar system installed on the roof of a mall building that caught fire. Review limited case documentation and assisted with filing a New Jersey Affidavit of Merit, a method to verify the lawsuit is not frivolous. Available to support case if or when it goes forward.
3/24 thru Present	Joshua D. Spencer, Esq. at Haynsworth Sinkler Boyd, P.A. expert witness for defendant. Switchboard Apparatus, Inc. d/b/a SAI Advanced Power Solutions, Inc., an Illinois corporation, and SAI Advanced Power Solutions, Inc., a Wisconsin corporation, plaintiffs vs. Philip O'Doherty, and E&I Engineering Corporation, a South Carolina corporation, defendants. Working for defendant. The case involves confidential issues with regard to medium and low voltage electrical switchgear. The case is ongoing.
3/2025-Present	Clément Mondesert, Director at Celduc Transfo, Sorbiers, France 42290. Project involves design validation of two 5.45MVA transformers and two 1.25MVA transformers. The transformers are for use at an Xcel Energy Ft St Vrain plant in Colorado, USA. The equipment is critical infrastructure. Transformer design and fabrication to be completed by Celduc Transfo, Xcel Energy requires design validation, and validation to be provided by Nowland Services, PLLC. Scope includes obtaining a Professional Engineer license by endorsement in Colorado, review design specifications and pertinent documents to ensure transformer

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	meets Xcel Energy, Colorado, and US requirements, interface with and support design team throughout the design process, attend Factory Acceptance Test (FAT), and provide PE stamp on final drawings.
3/2025-Present	Ismael Omar and Gilgila Ahmed vs. GEA Mechanical Equipment, US, Inc. d/b/a GEA Westfalia Separator. Plaintiff was injured operating a whey clarifier machine. The case is ongoing.
	Licenses and Certifications
PE	Professional Engineer in New Hampshire 13331
PE	Professional Engineer in Connecticut PEN.0029041
PE	Professional Engineer in New Jersey 24GE04987200
PE	Professional Engineer in Louisiana PE.0047454
PE	Professional Engineer in Colorado PE.0066202
CEM	Association of Energy Engineers Certified Energy Manager (CEM)
	Memberships
IEEE	Institute of Electrical and Electronics Engineers
NSPE	National Society of Professional Engineers
NSPE-NH	New Hampshire Society of Professional Engineers
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
NFPA	National Fire Protection Association
AEE	Association of Energy Engineers