

Mr. Joseph V. Castagna

USCG Veteran and US Citizen

8355 West Flagler St #205 877-861-5040
Miami, Florida 33144 Joseph.Castagna@nfpowerlab.com

Objective

Principal Power System Engineer

Education

Florida International University - College of Engineering & Computing

Electrical Engineering - Power Systems - Master's Degree Candidate: 2028

Electrical Engineering - Power Systems - Bachelor Degree 2026

Professional Experience

Principal Power System Engineer
North Foote Power Laboratory A Service Disabled Veteran Owned Business
Miami, Florida Dec. 2006 - Present

- Strengthened critical infrastructure security and resilience by proactively identifying and addressing vulnerabilities through comprehensive analysis.
- Performed comprehensive electrical assessments for diverse facilities, proactively identifying and resolving potential risks to optimize system performance and ensure a secure environment.
- Electrical consulting, advisory, expert witness, and third-party review services.
- Electrical power systems cyber physical and critical infrastructure hardening services.
- Case review regarding electrical apparatus accidents, construction defect, and failures.
- Engineering perimeter surveillance and physical security systems with countermeasures.
- Emergency power systems analysis, compliance, evaluation, and management services.
- Multiple projects typically for Data Centers, DoD, Medical, Petroleum, Telecommunications, and Utility industries covering ASTM, CSA, OSHPD, ISO, IEC, JCHA, NEIS, NFPA 20, 25, 70, 99, and 110, MILSPEC, Reg. 4 testing, NETA, NEMA, NIST calibration, IEEE standards, EGSA, EASA, and AQMD compliance, mitigation, testing, and training.
- Enhanced critical infrastructure performance and reliability through targeted power quality analysis and comprehensive facility evaluations.
- Enabled compliance with local and national standards through the delivery of comprehensive regulatory services.

Consultant, Project Manager, Technical Communicator, Foreman, Lead Electrician
Electrical Troubleshooting Services - Multiple Contractors - Freelance Troubleshooter
Northridge, California Dec. 2006 - May 2011

- Multiple international power system projects were intermittent between 1996 and 2011.
- Successfully completed multiple projects, ranging up to $4 Million, meeting deadlines, labor schedules, material budgets, and weekly and monthly updates to provide project status and resolve project delays within a reasonable time and budget constraints.
- Communicated effectively with contractors, project engineers, customer representatives, product engineers, sales personnel, and field service personnel.
- Large-scale projects in Data Centers, DoD, Medical, Petroleum, Utility industries covering ASTM, CSA, OSHPD, ISO, IEC, JCHA, NEIS, NFPA 20, 25, 70, 99, and 110, MILSPEC, Reg. 4 testing, NETA, NEMA, NIST calibration, IEEE standards, EGSA, EASA, and AQMD compliance, mitigation, and training.
- Multiple complete turnkey projects for decommissioning apparatus, crane operations on rigging, removal, and installation of new apparatus, with the transport of old apparatus for the client.
- Conducted power quality analysis and facility evaluations for critical infrastructure.
- Supervised, motivated, cross-trained, evaluated, and mentored foremen, journeymen, apprentices, and technicians.
- Performed NETA inspections and testing as a NETA third-party contractor, inspecting equipment and apparatus referencing ISO 9001 and hazard analysis.
- Completed Underground, T&I, New Construction, Residential, Commercial, Distribution, Industrial, and Manufacturing process work while specializing in motor controls, including PLC systems from multiple manufacturers, as a troubleshooter and writing SOP and related procedures.

Owner / General Manager Aug. 2002 - Dec. 2006
Crossed Anchors Mobile Services, Burson, California Kohler Marine Power Dealer

- Increased market share by analyzing customer demographics and needs and targeting market segments for development.
- Successfully negotiated multiple service contracts and long-term contractual service agreements.
- Successfully completed multiple projects:
  - Determined scope, material, labor, and logistics in a quotation format.
  - Met deadlines, vendor requirements, and certifications.
  - Provided timely updates on project status to customers.
  - Resolved project delays within a reasonable time and budget constraints.
  - Communicated effectively with subcontractors, project engineers, and customer representatives, including legal, accounting, and compliance.
  - Increased employee retention by developing and implementing an employee training, evaluation, and merit-based performance system.
- Conducted power quality analysis and facility evaluations for critical infrastructure.
- Multiple complete turnkey projects for decommissioning apparatus, crane operations on rigging, removal, and installation of new apparatus, with the transport of old apparatus for the client.

- Completed additional electrical engineering materials outside of working hours.
- Performed troubleshooting, diagnostics, and evaluations for emergency power systems, automatic transfer switches, distribution gear, electronic and relay protection systems, and diesel-driven fire pumps for critical and cogeneration facilities.
- Created and implemented a life cycle cost structure from existing capital budgets to maximize operational performance from field equipment such as heavy equipment, specialty trailers, and service trucks.

Technical Communicator / Field Service Journeyman Oct. 2000 - May 2002
Stewart & Stevenson Services Inc. - San Leandro, CA Detroit Diesel Distributor

- As a Technical Communicator, worked with Product Engineers from Detroit Diesel, leading staff and management to meet specifications for proper operation and provide solutions.
- Achieved significant savings from AQMD through mitigation by developing and implementing a compliant emission log training system.
- Excelled at quotation and competitive bids for labor, material, and logistics bid processes.
- Served as Project Manager during the commissioning process at customer locations.
- Trained Apprentices, Technicians, Journeyman, and Management staff on Caterpillar, Generac, and Woodward Controls equipment.
- Completed additional electrical engineering materials outside of working hours.
- Performed troubleshooting, diagnostics, and evaluations for emergency power systems, automatic transfer switches, distribution gear, electronic and relay protection systems, and diesel-driven fire pumps for critical and cogeneration facilities.
- Multiple complete turnkey projects for decommissioning apparatus, crane operations on rigging, removal, and installation of new apparatus, with the transport of old apparatus for the client.
- Installed and terminated voltages up to 69 kV for testing power systems.
- Gathered energy consumption, system efficiency, operational savings, and service data. Obtain and analyze customer utility usage data.
- Conducted power quality analysis and facility evaluations for critical infrastructure.

Project Manager / Field Service Journeyman April 1999 - Sept. 2000
Holt of California - Stockton, CA Caterpillar Engine Dealer

- Commissioned power systems, multiple engines, and single genset start-up services.
- Served as Technical Communicator, working with the Manufacturer's Product Engineers and staff to resolve technical problems found on previously incorrectly installed apparatus.
- Served as Project Manager, completed turnkey projects and addressing power quality.
- Worked directly with the customer's Project Engineers to meet specifications and guidelines regarding equipment installation.
- Completed additional electrical engineering course materials outside of working hours.
- Multiple complete turnkey projects for decommissioning apparatus, crane operations on rigging, removal, and installation of new apparatus, with the transport of old apparatus for the client.
- Worked with the jobsite Superintendent and other contractors to correct construction blueprint errors to reduce potential customer failures before system commissioning.
- Extensive service experience in diagnosis, repairing, and troubleshooting power systems.

- Conducted site visits to follow up on system operations, maintenance, and testing.
- Conducted power quality analysis and facility evaluations for critical infrastructure.

Test Cell Operator / Field Service Journeyman April 1997-March 1999
Hawthorne Power Systems, San Diego, CA Caterpillar Power Systems Distributor

- Managed, maintained, and operated a test cell facility for industrial engines, heavy equipment engines, trucks, and marine engines for engines rated from 40 - 7,268 BHP.
- Worked with the Shop, Field Service, New Equipment, and Used Equipment departments.
- Managed all testing equipment, scheduling, AQMD compliance, equipment repairs, instrumentation, vendors for parts and services, replacement parts, adapters, and fabrication of all specialty tooling for the test cell facility.
- Performed quality control and testing on all manufacturers and models of engines.
- Completed rewire and pre-sales modifications to wiring systems to meet customers' needs.
- Excelled at the documentation of facility status and monthly updates to management.
- Cross trained in Engine Fuel Injection Systems and engine Performance Diagnostics on mechanical and electronic engine control systems for multiple manufacturers.
- Completed additional electrical engineering and engine courses outside of working hours.
- Completed apparatus and generator rewiring and modifications to wiring systems for the used equipment sales department.
- Identify energy conservation measures and perform a financial analysis of the energy and operational savings from updates to facility apparatus.
- Extensive international field experience from three days to three months repairing, diagnosing, and troubleshooting power systems in South America and the South Pacific.

Field Service Technician / Shop Electrician July 1996 - March 1997
Pantropic Power Products, Miami, FL Caterpillar Power Systems Distributor

- Inspected, maintained, repaired, and serviced critical power systems at multiple facilities.
- Cross-trained shop personnel on proactive troubleshooting fundamentals.
- Completed distributor certification, practical factors, and training testing programs.
- Inspected, maintained, repaired, and serviced power systems on foreign-flagged vessels.
- Provided customer and end-user technical training on generators, fire pumps, remote annunciators, automatic transfer switches, refueling, operation and maintenance, testing procedures, inspection procedures, emission requirements, and compliance.

Field Service Technician June 1993 - June 1996
Alban Engine Power Systems, Baltimore, MD Caterpillar Power Systems Distributor

- Completed qualification exams on Caterpillar’s electrical and mechanical apparatus.
- Completed multiple Caterpillar manufacturer factory training certifications on apparatus.
- Completed certification exams for power system generators, switchgear, and fire pumps.
- Inspected, maintained, and repaired critical power system apparatus for DoD facilities.
- Completed multiple Caterpillar self study customer service - Service Pro training programs.
- Designed and implemented equipment upgrades to reduce service department expenses.
- Assisted lead personnel on multiple project system commissioning and start-ups.
- Completed additional electrical engineering courses outside of working hours.
- Performed apparatus testing with performance verification on critical load backup systems.

- Completed multiple single genset commissioning and start up services.
- Implemented remote communications programs to increase efficiency for service trucks.

Publications & Research

Cyber-Physical Hardening of Utility Grid Infrastructure using Fault Location, Isolation, and Service Restoration (FLISR) Systems: Addressing Vulnerabilities in Communication, Control, and Monitoring

- Florida International University - College of Engineering & Computing Sep 2025 to present
  Master of Science thesis in the Electrical Engineering Degree Program.

Critical Infrastructure Hardening from Cyber Attacks

- Florida International University - College of Engineering & Computing Sep 2023 to present
  Working paper - Master of Science in the Electrical Engineering Degree Program.

Facility Hardening of Cyber Attacks from the Electrical Grid

- Florida International University - College of Engineering & Computing Sep 2023 to present
  Working paper - Master of Science in the Electrical Engineering Degree Program.

Military Service

Machinery Technician (MK) / Shipboard Engineer Nov. 1988 - Jan. 1992
United States Coast Guard - USCGC REDWOOD WLM 685 New London, CT

Awards: National Defense Service Medal — Cutterman's Pin for Sea Service
Bicentennial Unit Commendation Ribbon — Sea Service Ribbon with Star
Rifle Marksmanship Ribbon with "S" Device — Pistol Marksmanship Ribbon

- US Coast Guard Fleet Damage Control Training Team - Shipboard Firefighting Training.
- Damage Control Qualification - US Navy Buttercup Trainer, Newport, Rhode Island.
- Shipboard Firefighting Qualification - US Navy Farrier Firefighting School, Norfolk, Virginia.
- Qualification As Oiler - In Port and Underway - Engineering duty section.
- Small Boat Engineer Qualification - In Port and Underway - Engineering duty section.
- US Coast Guard Basic Damage Control Qualification - Engineering duty section.
- Section Leader (Manager) for Non Rate Duty Section Personnel in main propulsion and auxiliary systems; trained incoming shipboard engineering duty section personnel.
- Range Qualified for Boarding Team and crossed trained in Deck Force operations.
- Assisted Electricians Mate (EM1) with assigned tasks and preventive maintenance schedules.
- Assisted Electronics Technicians (ET) with assigned tasks and preventive maintenance schedules.
- Completed MRN correspondence coursework for striking Machinery Technician (MK) rate.
- Boom truck and crane operator qualified - Assisting Deck Force operations.

Licenses

Service Disabled Veteran Owned Business - SDVOB CAGE CODE #9JWQ6
Federal Communications Commission - Amateur Radio License # KQ4MOQ
California Certified General Electrician #134818
US Transportation Security Administration - Transportation Workers Identification Credential
Florida Commercial Driver's License - Class A
Endorsements: Air Brakes, Combination Vehicles, Doubles & Triples, HAZMAT, and Tanks

Certifications

Clarke Fire Pump Engine Service Training
Chevron Bay Area Refinery
Exxon Hazardous Identification Training
Los Angeles Refinery Safety Overview
Generac Standby Generator & Transfer Gear Service Training
Lift Truck Operator Training
Lift-It Manufacturing - Synthetic Lift Rigging Product Training
Teamsters Joint Council No. 7 Commercial Drivers Education Program

Woodward

Introduction to Control Fundamentals, Theories, and Terminology
Digital Synchronizer and Load Control - DSLC
Master Synchronizer and Load Control - MSLC

Caterpillar

CAT G3600 Master Mechanic
CAT G3600 Lean Burn Engines
CAT Electric Power Generation
CAT Parallel Application & Switchgear
G3600 Training - Enginuity Ltd.
3406 Overhaul School
3208 Maintenance & Tune up School
Cat Power Pro Program
SDCCD Diesel Injection Fuel Systems - Fuel Bench Coursework

Software Programs

Caterpillar

Electronic Technician
CCMPC
Datalogger
Dealer Business System
DVRview
EPG Designer

Cummins

Power Command 2100 Control with CAN Link Qualification
Insite

Kohler

Kohler Monitor III
MPAC1500 Decision Maker

Detroit Diesel - DDC-MTU

Detroit Diesel Electronic Controls III/IV DDC/MTU Basler Generator Control Systems

General

Cadence Pspice	InControl	Maximo
Electronics Workbench	SCADA	MULTISIM National Instruments
Multiple PM maintenance programs	Mathematica	Reliable Power Meter Software
SolidWorks Electrical	RSLogix	SolidWorks
PowerWorld	MATLAB	Jupyter Notebooks Python

Professional Associations

Institute of Electrical and Electronics Engineers - Senior Member

Eta Kappa Nu – Honor Society (HKN)	Consultants Network
Electromagnetic Compatibility Society	Control Systems Society
Power Electronics Society	Oceanic Engineering Society
Industrial Electronics Society	Power & Energy Society
Professional Communication Society	Magnetics Society
Instrumentation and Measurement Society	Reliability Society
Dielectrics and Electrical Insulation Society	Industry Applications Society

American Society of Civil Engineers - ASCE - Member
ASCE - Utility Engineering and Surveying Institute - Member
ASCE - Miami Dade Branch - Member
Student Veterans of America - SVA - Student Member
The Owner Operator Independent Drivers Association - OOIDA – Life Member

Awards and Distinctions

2025 IEEE Power & Energy Society Scholarship Plus Initiative Recipient Oct 2025
Issued by the Institute of Electrical and Electronics Engineers.

Florida International University - College of Engineering & Computing Dean’s List May 2025
Spring Semester 2025 Dean’s List 4.0 out of 4.0.

2024 IEEE Power & Energy Society Scholarship Plus Initiative Recipient Nov 2024
Issued by the Institute of Electrical and Electronics Engineers.

IEEE - Eta Kappa Nu (HKN) - Florida International University (Attended 2022 - present)
Honor Society of the Institute of Electrical and Electronic Engineers. Fall 2022

George & Bernice Cooke Scholarship for Military and Veteran Students Recipient
Issued by The George & Bernice Cooke Scholarship. Sep 2022

2023-24 & 2024-25 - SGA Patriot Scholarship (Military) Recipient
Issued by Florida International University Student Government Association. Aug 2023

Society of Scholars - Florida International University
Pre Law Student Member - Phi Alpha Delta Fraternity, International. Fall 2022

California State University Northridge (Attended 2011-2021)
Impromptu Speech Competition second place. 2012

California State University Northridge (Attended 2011-2021)
Veteran Resource Center Co-Founder. 2010

Catonsville Community College (Attended 1992-1995)
Dean’s List Catonsville, MD 1993

Maryland Governors Fitness Award for participating in the Ocean to Ocean ‘81
(Delaware to Oregon) bicycle trip of 3,658 miles in 67 days. 1981