

ANNEXE A



Professional Summary

Loreto Sarracini has been immersed in the electrical power industry for almost 40 years, both working in and supporting electrical utilities across North America achieve their operational and management goals. His experience is founded in Power System Operations and complemented with projects such as NERC Regulatory Compliance, EMS/SCADA, system operations, Information Communication and Technology, automation, generating plant construction, operations and maintenance, cyber and physical security, and establishing Smart Grid strategies and roadmaps.

His NERC Regulatory Compliance projects include: NERC/Region readiness audit and mock audit for both the CIP and Non-CIP Standards for all NERC registered entity types, assisted in the development of Policies, Guidelines and Procedures for NERC/Regions Reliability Standards Compliance, helped to identify the required evidence to demonstrate compliance, and developed and conducted Training and Compliance programs for NERC Compliance.

Relevant Project Experience

NERC Standards Compliance

- Conducted NERC/Region readiness audit and mock audit for both the CIP and non-CIP Standards for all NERC registered entity types (BA, RP, GO, GOP, TO, TOP, LSE, PSE, DP, RC, TSP, IA, TP, PA and RSG) and in all NERC Regions
- Assisted Utilities in the development of Policies, Guidelines and Procedures for NERC/Regions Reliability Standards Compliance and helped to identify the required evidence to demonstrate compliance
- Assist Utilities to prepare for their actual NERC/Regional Audit, from developing their RSAWs to representing the Utility at the actual audit as their SME
- Developed Training programs and Compliance programs for NERC Compliance
- Develop and conduct training for CIP and Non-CIP standards
- Assist clients with understanding the new BES definition and CIP V5 categorization, and the associated impacts
- Assist clients with strategy development and implementation of a program to meet the new CIP 5 requirements
- Assisted a number of Utilities to establish and implement a CIP Cyber and Physical Security Program for Power Plants, Substations and Control Centres
- Conducted assessments of utilities systems/tools/processes for managing compliance and assisted in identifying and developing new systems/tools/processes to manage compliance
- Conducted assessments of Utility's Internal Compliance Program (staffing/program structure/strategy/tools) and provide a report identifying the GAPs and process improvements
- Assisted utilities to implement the recommendations from the GAP analysis of their Internal Compliance Program assessment
- Developed a NERC Compliance Overview document, a Compliance Plan User Guide on how to develop an Internal Compliance Program, and a sample Internal Compliance program; prepared and

Areas of Expertise

- Power System Operations & Planning
- NERC Compliance (CIP and Non-CIP)
- EMS/SCADA
- Project Management
- Systems Integration

Education

- Bachelor of Applied Science, Electrical Engineering, University of Toronto, 1976

Professional Associations

- PEO - Professional Engineers of Ontario

delivered training workshops and webinars on how to implement the developed materials; National Rural Electric Cooperative Association (NRECA) and the American Public Power Association (APPA) to share with their members, numbering over 2000 utilities

- Developed and Conducted several NERC CIP Cyber and Physical Security Workshops and Non-CIP Workshops to utilities in Canada and United States
- Provided services to a number of Utilities to establish and implement a Physical Security Program to secure their Bulk Electric System (BES) assets to meet the NERC CIP standards

EMS/SCADA/SmartGrid

- Supported utilities with the development of SmartGrid strategies and roadmaps
- Provided an Acting Managers role for the Energy Control System department for Georgia System Operations Corporation (GSOC) (formerly Oglethorpe Power Corporation) based in Atlanta Georgia (USA). Responsible for the management of GSOC's Energy Control System, which includes all development and support staff (System & Database administrators) and all Dispatching Center tools (Hardware and Software) used by the System Dispatchers. This position was provided for approximately 2 years until GSOC hired a permanent Manager
- As Manager of GSOC's Energy Control System, additional responsibilities included designing an infrastructure to allow GSOC's EMS/SCADA system to be integrated with other internal and external systems while ensuring the security, reliability and performance of the EMS/SCADA system and developing an overall maintenance and disaster recovery strategy for the system. Their internal systems included their Corporate Network, Data Historian and the Remote Revenue Metering System. The external systems included dedicated data links (ICCP) with other control centres and the internet to support various functions such as: OASIS, OATI Electronic tagging, Web based Custom Energy Market Application to provide data to Power Marketers and for remote database support (utilizing Virtual Private Network (VPN) technology)
- Established GSOC's EMS/SCADA maintenance strategy
- Provided both management and technical services for a number of Utilities in managing the implementation of new and upgrades of EMS/SCADA system, from system definition phase through to system implementation and cutover, including the integration of EMS/SCADA system with internal and external systems and ensuring that the system delivered were NERC CIP Compliant.
- Prepared and delivered an Information Technology strategic planning seminar to the Alabama Municipal Electric Authority (AMEA) and their 11 member Utilities. The majority of the utilities are electric, but some are also responsible for water and gas. The seminar included their SCADA systems and Corporate IT infrastructure
- Provided Project Management and Technical assistance to Georgia System Operations (formerly Oglethorpe Power Corporation (OPC)) based in Atlanta Georgia (USA) in the implementation of their new state of the art EMS/SCADA system being supplied by GE (formerly Harris Corporation). Continued to provide Project Management and Technical assistance for the upgrade of GSOC's EMS/SCADA system since the installation of their first system
- Developed the Data Logging and Reporting requirements for Oglethorpe Power Corporation's (OPC) System Control Department to ensure that the associated information needs of OPC and other external agencies are adequately met. Also designed the required reports for development and implementation by the EMS/SCADA vendor based on the reporting requirements
- Oglethorpe Power Corporation operations staff on the use of EMS/SCADA applications supplied by the vendor of their state of the art EMS/SCADA system for the effective operation of the Power System

- Established the infrastructure between the EMS/SCADA computing environment and the Corporate Computing environment for the transfer of information using Replication Server to other business within the Corporation
- Provided both management and technical services for a number of Utilities in managing the implementation of new and upgrades of EMS/SCADA system, from system definition phase through to system implementation and cutover (participating in the FAT and SAT), including the integration of EMS/SCADA system with internal and external systems, ensuring that the system delivered were NERC CIP Compliant and providing the necessary training on the system and applications
- Canada, Ontario Hydro Operations staff, technical and non-technical, on the Ontario Hydro energy management system (i.e. System Control Centre - Data Acquisition Computing System DACS)

Owner's Engineer and Technical Support

- Construction of Generation Facilities for various Utilities and IPPs:
 - Alabama Municipal Electric Authority
 - Costal Power Corporation
 - Conectiv
 - Doyle 1 LLC
 - Florida Power and Light
 - Greater Toronto Airport Authority
 - Oglethorpe Power Corporation
 - Smarr Energy Facility – 2-120 MW Siemens/Westinghouse Simple Cycle Gas Turbines
 - Sewell Creek Energy Facility – 1-120 MW and 2-140 MW Siemens/Westinghouse Simple Cycle Gas Turbines
 - Talbot Country Energy Facility – 6-120 MW Siemens/Westinghouse Simple Cycle Gas Turbines
 - Chattahoochee Energy Facility – 550 MW Siemens/Westinghouse Combined Cycle Gas Turbines

IT Services

- Designed an IT system (Hardware and Software) to allow a newly formed company providing services to Electrical Utilities to effectively carry out their business functions. The system included remote access for staff, the capability to allow the company to provide services to host web pages, database server, file server and network redundancy, RAID technology and the necessary firewalls to ensure the system security. Prepared a Request for Quotation (RFQ) for the procurement of the IT system (Hardware, Software, System Network, Support & Maintenance Services)
- Developed software products covering all aspects of utility operations and administrations in such diverse fields as:
 - Project and Work Management
 - Expert Design Systems
 - Water Management
 - Demand Side Management
 - Power System Planning and Operations
 - Computer Network Management
 - Nuclear, Thermal and Hydraulic Generation
- Design, development and maintenance of all power system application programs:
 - Identification of the computational techniques to be used in the development of application programs
 - Design of the man/machine interface and procedures
 - Software design, coding and testing

- Documentation
- User training and support
- Integration and acceptance of new or modified software into the live environment
- Developing, commissioning and maintaining production (economy) and control oriented application programs
- Developing, commissioning and maintaining security related application programs
- Determining the requirements, methods and cost/benefit of new applications in close liaison with other departments

Bulk Electricity System (BES)

- Responsible for providing post event analysis of BES operation and related consulting services
- Supervised a group of professional and technical personnel responsible for providing a regular evaluation results service for the financial costs attributable to those relevant BES limitations encountered in the:
 - efficient dispatch of Ontario Hydro generation resources
 - sale of electrical capacity and energy to other organizations, both within and outside of Ontario
 - purchase of electrical capacity and energy from other organizations, both within and outside of Ontario
- Provided a regular evaluation results service for the financial benefit resulting from identified operational practices and procedures
- Responsible for reviewing, analyzing, and making recommendations related to the on-going economic operation of the BES
- Identification of new areas where monitoring and the subsequent feedback of post event evaluation data would be beneficial
- Identification and development of new methods for the monitoring of BES operation to meet changing operational circumstances
- Provided appropriate guidance/direction within and outside Ontario Hydro with operating experience and assessments to improve planning, design, and operation of the interconnected system
- Advised management regarding past, present, and future operating matters

Hydro Electric Power Plant Resource Planning

- Provided near term policies and procedures and short and mid-term program for hydraulic storage inventories
- Provided policies and procedures for operation of hydraulic resources and utilization of hydraulic storage inventories for use in the near-term to the System Operation Department
- Provided the program for operation of hydraulic resources and utilization of hydraulic storage inventories for the short and mid-term to all of Ontario Hydro
- Represented Ontario Hydro on external boards and committees involving external regulatory agencies or other governmental, corporate, or private users of water, in regard to near term policies and procedures and short and mid-term program relative to hydraulic resources and hydraulic storage inventories
- Provided forecasted results in the short and mid-term for hydraulic storage inventories utilization
- Provided information on operating experience and made assessments and recommendations to both inside and outside Ontario Hydro, regarding hydraulic resource utilization to improve planning and design of the bulk electricity system generating capacity in the short-term



Professional Summary

Ron Falsetti has an extensive career in the electric utility operation at both plant and system levels attained throughout his 36 year tenure leading to comprehensive knowledge of North American Reliability Standards, and intimate and practical knowledge of NPCC criteria. Ron was involved in the implementation and operation of the Ontario market and had direct responsibility for managing the Ontario Reliability Compliance Program - to establish and ensure compliance of both the IESO and its 200 Ontario market participants, with the NERC Standards and NPCC Criteria. He was also responsible for managing and preparing the IESO readiness, as a Reliability Coordinator, Transmission Operator, Balancing Authority, Interchange Authority, Planning Coordinator and Transmission Planner, for NERC compliance audits and readiness reviews. Building on his credibility, Ron has been active in numerous NERC and NPCC Compliance Committees and with Standards Committees with the IESO, ISO/RTO Council (IRC) and NPCC. He has led and prepared several mock audits and assessments, preparing reports on the status of clients' compliance, actions required to correct and mitigate areas of non-compliance, as well as the assessment, development, and implementation of Internal Compliance Programs and Organizational constructs to manage such programs.

Relevant Project Experience

NERC Standards Compliance

- Responsible for regulatory project oversight and development/maintenance of regulatory sustainment services
- Compliance validation and audit readiness review of various clients that include Independent System Operator (ISO), fully integrated utilities and Transmission owners and operators
- Member of a fully integrated utility Reliability Compliance Steering Committee providing an independent object view of its Reliability Compliance Program and on regulatory developments affecting it; a committee of senior management established to provide oversight and guidance of its Reliability Compliance Program on behalf of the Board Audit Committee
- Development of clients Internal Compliance Program (ICP)
- Hydro One Networks Inc.: conducted an assessment and detailed report of Hydro One's ICP and organization construct, and managed /oversaw the development and implementation of a comprehensive ICP to address identified gaps and recommended enhancements.
- Ontario Power Generation (OPG): conducted a Hydro Plant Group audit readiness review and assisted in preparation of the required compliance filing documentation in preparation of an IESO Market Assessment and Compliance Division (MACD) audit
- Oglethorpe Power Corporation (OPC): Provided expertise and technical guidance to a Protection System standard "deep dive" review in responding to a request for information by the SERC Region Entity in regards to PRC-005 self-report compliance investigation
- Provided expertise and technical guidance to an NPCC - TO/TOP in responding to a request for information by the New Brunswick System Operator and NPCC in regards to a 230 kV line vegetation outage incident compliance investigation
- Rio Tinto Alcan Inc. (RTA): Developed a report for filing with the Québec regulator; the Régie de l'énergie (the "Régie") on behalf of RTA presenting technical arguments against the Hydro-Québec's

Areas of Expertise

- NERC Compliance
- FERC 693
- Ontario Regulations
- Market Rules

Education

- Electrical Engineering, University of Western Ontario, 1977

Professional Associations

- PEO - Professional Engineers of Ontario

- Direction – Contrôle des mouvements d'énergie (HQCME) group's proposed Québec Compliance Monitoring and Enforcement Program (QCMEP) for its Saguenay Lac-Saint Jean Installation
- **Brookfield Power:** Developed a report for filing with the Québec regulator; the Régie de l'énergie (the "Régie") on behalf of Brookfield Power presenting technical arguments against the Hydro-Québec's Direction – Contrôle des mouvements d'énergie (HQCME) group's proposed Québec Compliance Monitoring and Enforcement Program (QCMEP) for its Lièvre installation. Assisted in developing responses to the Régie's subsequent request for information on the above filing
 - **Nova Scotia Power Incorporated (NSPI):** Project lead for the gap analysis /compliance readiness assessment for this fully integrated utility
 - **Greenfield Energy Center (GEC):** Developed GEC's Transmission Vegetation Management Program and related documentation
 - **Provided expert guidance on:** i) the application of Standards in other jurisdictions within the NPCC; ii) filings and rulings at NPCC and FERC regarding application of reliability standards etc. Working closely with the client management and lawyers, preparing expert testimony for filing for the upcoming hearings that he will be participating in
 - **Managed IESO Reliability Compliance Program (IRCP);** monitoring, assessing and reporting Ontario market participant and its compliance to North American Electric Reliability Corporation (NERC) standards and Northeast Power Coordinating Council (NPCC) Inc. criteria
 - **Managed IESO reliability standards and criteria review program** providing consolidated comments to NERC and NPCC standards and criteria under development
 - **Managed IESO readiness for NERC compliance audits and readiness reviews**
 - **Chair of IESO Reliability Standards Standing Committee (RSSC);** a stakeholder forum designed to:
 - Manage and maintain the NPCC Standards Development Procedure and processes
 - Notify stakeholders of reliability related information on new and developing reliability standards, NPCC criteria and Electric Reliability Organization (ERO) matters
 - Discuss, provide advice and to the extent possible, develop consensus comments on new and developing reliability standards and criteria
 - Engage stakeholders in the standard development process of NPCC Inc. and NERC
 - **IESO representative and Vice-Chair (2005-2008) of NPCC Compliance Committee** a committee of the NPCC Board responsible for overseeing NPCC's compliance program and registered entity compliance with NERC Standards and NPCC Criteria, with notable responsibility to:
 - Review and approve NPCC Compliance Staff procedures for implementing the compliance program
 - Review and endorse processes used, by NPCC Compliance Staff, for noncompliance assessments and determination of sanctions
 - Provide final approval of compliance assessments done by NPCC Compliance Staff related to NPCC Reliability Criteria, including approval of non-monetary sanction recommendations
 - Provide a pre-hearing forum for the resolution of contested compliance and /or sanction determinations
 - Conduct annual evaluations of the NPCC Compliance Staff's CMEP implementation
 - **Chair of NPCC Registration Sub-Committee,** responsible for providing direction to the Compliance Committee and NPCC Compliance staff on entity registration. Specifically with respect to developing the strategy and registration methodology for generator owners/operators and transmission owners/operators as it pertains to NPCC definition of bulk power system

- IESO representative on Regional Standards Committee. A committee of the NPCC Board, charged with:
 - Management and maintenance of the NPCC Standards Development Procedure and processes
 - Providing consolidated NPCC Regional review and comment to the existing and proposed NERC standards and participate in the NERC Reliability Standards Development Process
 - Identification of upcoming issues associated with new NERC reliability standards and their potential impact to the NPCC Region, (i.e. Regional difference). Proposing solutions or guide the development of the standards through effective and timely comments and soliciting NPCC participation on the standard authorization requests (SAR) and reliability standards drafting teams
- ISO/RTO Council (IRC) representative on NERC Compliance and Certification Committee; a committee of the NERC Board with a mandate to engage, support and advise the Board and NERC Compliance staff regarding all facets of the NERC Compliance Monitoring and Enforcement Program, the Organization Registration program and the Organization Certification program
- Coordinating System Operation's strategic reliability and business risk management process
- Accountable for managing and facilitating market participant's registration and market entry prior to market opening
- Project coordinator for NERC's Electronic Interchange Transaction (e-tags) implementation

Account Management/Advisory - Wholesale Power

- Responsible for key industrial & municipal utility accounts, providing regulatory, financial and technical guidance to plant managers and utility Commissions and for managing overall customer relationship
- Identified, developed and facilitated implementation of innovative energy solutions and energy supply contracts with key Industrial & municipal utility accounts
- Responsible for developing municipal utility rates cases for Ontario Hydro Board approval
- Site Energy Coordinator, Electrical Systems & Process Control Engineer - Bruce Nuclear Power Complex
- Responsible for HVAC & electrical systems commissioning, diagnostic and maintenance programs for emergency power combustion turbine units, HP steam system controls and site electrical protection system
- Chair - "BNPD Strategic Operating Planning Committee" responsible for developing optimum short and long-term energy production deployment objectives, strategies, guidelines, plans and software applications to maximize site electrical output based on bulk electrical system limitations impacting Bruce flows (locked in energy and spring freshet)

Professional Summary

Joel Charlebois is a proven leader and respected mentor of a strong team of NERC compliance professionals. He successfully manages numerous client engagements covering a wide range of regulatory and technical requirements. Joel maintains an extensive understanding and practical experience in all aspects of NERC regulatory compliance for both CIP and Non-CIP regulatory compliance projects (governance, mock audits, compliance tools, etc.). His experience and broad perspective bridges the gap into technical solutions for proactive compliance. Joel's aptitude and acumen transcends boundaries to support a multitude of Information Technology applications and implementation projects (SCADA/EMS, web applications, software design and development, systems integration, databases, etc.), and into business analytics, that guarantees delivery of effective and comprehensive solutions to complex problems.

Relevant Project Experience

NERC - Regulatory Compliance Management Systems

- Managed the installation, configuration, customization and operational deployment of the SigmaFlow NERC Compliance Manager solution to facilitate NERC CIPv5/6 compliance for Ontario Power Generation (OPG)
- Performed assessment and gap analyses of NERC Compliance Management Systems (CMS) and tools
- Conducted an extensive evaluation of a large Transmission Owner/Operator's CMS and related methodologies used for monitoring, complying with, and storing evidence for NERC and regional regulatory requirements
- Developed guidelines for transitioning compliance programs towards a proactive, integrated and highly automated compliance management, monitoring, and reporting solution

NERC CONSULTING SERVICES

- Reviewed, interpreted and/or advised clients on:
 - Reliability Assurance Initiative
 - Internal Controls & Evaluations
 - NERC Standards development
 - FERC NOPRs and Orders
 - Requirement obligations & evidentiary artifacts
 - Requirement interpretation requests
 - Standard & requirement enforcement dates
 - Market rules & obligations
 - Rules of Procedure and audit processes
 - Enforcement actions and penalties
 - NERC publications
 - Recommendations for balloting
- Registered Entity Types include: BA, IA, PA, RC, RP, RSG, TOP, TSP, GO, GOP, TO, TP, DP, LSE, RP, PSE
- Clients include: BC Hydro, Brookfield Renewable Power, Electricities (represents ~50 municipalities),

Areas of Expertise

- NERC Compliance
- Systems Integration
- Project Management
- Software Design and Development
- SCADA/EMS

Education

- Bachelor of Engineering Science, Electrical Engineering, University of Western Ontario, 2003
- Bachelor of Science, Computer Science, University of Western Ontario, 2003

Professional Associations

- PEO - Professional Engineers of Ontario



Cobra Thermosolar Plants, Hydro One, Hydro Quebec TransEnergie and Production, Independent Electricity System Operator (IESO), Indianapolis Power & Light, Lower Colorado River Authority (LCRA), Muscatine Power and Water, New Brunswick Power (NBP), Ontario Power Generation (OPG), Ogiethorpe Power Company (OPC), TransCanada, and more

NERC - Regulatory Compliance Audit Support

- Conducted and participated in several NERC Non-CIP and CIP Compliance Mock Audits and Compliance Posture Assessments covering a wide range of NERC Registered Entity Types for several organizations including:
 - Grid Operational Control Centers
 - Municipal Utilities & Vertically Integrated Utilities
 - Generator & Transmission Owners/Operators
- Prepared extensive and detailed NERC Audit & Compliance Posture Assessment Reports that provided both NERC & Regional (NPCC, ERCOT, SERC, etc.) compliance gap analyses along with recommendations for remedying any perceived gaps and that described opportunities to enhance existing documentation to ensure continued successful regulatory compliance
- Developed RSAW narratives, compliance responses, and evidentiary documentation lists for submission to Compliance Enforcement Authorities
- Assisted with the identification of relevant and high quality evidentiary and supporting documentation
- Reviewed evidentiary and supporting documentation packages prior to submission to Compliance Enforcement Authorities
- Drafted responses to Requests for Information (RFIs) received during the audit process
- Identified instances when auditors went out of scope of the requirement language and carefully crafted responses that were provided to the audit team addressing such

NERC - Regulatory Compliance Programs

- Developed NERC Regulatory Compliance program documentation, complete with descriptions of compliance analyses and actions, evidentiary requirements, and accountability assignments that enable Entities to establish a strong culture of compliance, including but not limited to:
 - Overall Governance
 - Compliance Policies
 - Methodologies (e.g., Facility Ratings)
 - Programs (e.g., Protection System Maintenance)
 - Emergency Operations Plans (e.g. Event Reporting)
 - Operator Level Procedures, Instructions, Handbooks, etc.
 - Internal Controls
- Assessed and performed gap analyses of NERC Regulatory Compliance program documentation while providing recommendations to remedy any identified gaps
- Developed and conducted general and standards specific NERC compliance training

NERC - Industry Participation

- Attended and participated in NPCC Reliability Standards Committee (RSC) meetings, compliance workshops, and conferences
- Speaker and panelist on the topic of NERC compliance



SCADA/EMS WORK

- Assisted a Transmission Owner and Operator with the development of a Request for Proposal for a new SCADA/EMS system to upgrade the existing system. The RFP included requirements for the following new SCADA/EMS systems components:
 - Primary Control System (PCS)
 - Backup Control System (BCS)
 - Quality Assurance System (QAS)
 - Program Development System (PDS)
 - Operator Training Simulator (OTS)
 - High Speed Data Historian

- Provided technical support in the specification and selection of a Transmission Operations System (SCADA/EMS) for a new Transmission Operations Center:
 - Requirements Analysis
 - Development of a Request For Proposal
 - Participation in the Vendor Analysis process

- Participation in the implementation of a SCADA System and Metering Settlement System to enable the participation of a set US Electric Cooperatives in multiple energy markets. Participation involved:
 - Market Protocols Analysis
 - SCADA and Metering billing/settlement tool requirements
 - Cost Analysis
 - SCADA System procurement and implementation
 - Revenue Meter procurement and implementation

POWER SYSTEMS IT WORK

- Implementation of a web-enabled system for Power Scheduling and Settlement by multiple Power Marketers for Georgia Systems Operations Corporation. These roles include:
 - Functional and Policy Analysis
 - Establishment of Business Rules and Requirements to govern scheduling activities
 - Design, development, documentation and installation of the necessary environment & software components
 - Project Management for product enhancements and upgrades
 - Integration with EMS/SCADA, Load Forecasting, OATI Tagging, PI and eDNA Historians, etc.
 - Virtualization and migration from a Solaris & Oracle environment to a Microsoft Windows, SQL Server, and VM Ware environment

- Defined and prepared specifications for Market Participation IT Tools for MISO, PJM and NYISO markets

- Design & Development experience with several IT infrastructure & software products, as well a strong programming skills in multiple languages, including:
 - VMware Virtualization Software
 - Databases & SQL (Oracle, SQL Server, etc.)
 - JAVA, JavaScript, JQuery, JSP, C, Visual Basic, HTML, etc.

- Web Application Infrastructure Installation, Configuration and Administration:
 - Application Servers, Secure FTP Servers, LDAP Directory Servers, Proxies, Firewalls, etc.



- Experience with an electric distribution utility in Ontario involving:
 - Detailed designs, materials lists & estimates for overhead and underground work relating to customer projects
 - Prepare and review Residential, Industrial/Commercial development design drawings
 - Preparation of cost estimates and bill of material for project service orders
 - Field verification of existing site/electrical plant condition
- Prepared software specification and requirements for software tools to provide data editing and report generation capabilities for a XA/21 Energy Management System (EMS)
- On-going system support for a major US Electric Systems Operations Company

MANUFACTURING IT WORK

- Trained and Performed Radiographic Quality Inspection of various die cast metal parts for the Power Industry
- Performed maintenance and assembly of NASAT MC Actuator Reclosers and Power Units and became familiar with several products used in various applications for High Power Transmission
- Performed installation and configuration of several types of hardware and software components for IBM laptops, workstations, and servers
- Support and troubleshooting methodology for several hardware and software components

Continuing Education

- eDNA Historian User and Administrator Courses: InStep Software LLC, 2014
- Fundamentals of Auditing for NERC Compliance Team Leaders: North American Electric Reliability Corporation, 2011
- Fundamentals of Auditing: North American Electric Reliability Corporation, 2011
- Gathering Quality Evidence During Compliance Audits: North American Electric Reliability Corporation, 2011
- Generation Controls Course: Kestrel Power Engineering Ltd., 2008
- Project Management for Software Development: Learning Tree International, 2007
- Locational Marginal Pricing (LMP): PJM Interconnection, 2005
- ICCP: Survalent Technologies, 2004