

# PROTECTION . CONTROL . INTEGRATION

SOLUTIONS FOR POWER GENERATION & TRANSMISSION



**Casco**  
SYSTEMS

Engineering  
Protection  
Control  
Integration  
Automation

*The Control & Automation Solutions Company*



## ENGINEERING SERVICES

- PLANT AUTOMATION
- SUBSTATION INTEGRATION
- ADVANCED CONTROL SYSTEMS
  
- RELAY APPLICATION ANALYSIS
- PROTECTIVE RELAY SETTINGS
- PROTECTION & CONTROL
  
- ELECTRICAL DESIGN
- CONCEPTUAL DESIGN
- SCOPE DEVELOPMENT
- SPECIFICATION DEVELOPMENT
- INTERCONNECTION CONSULTING
  
- PROJECT MANAGEMENT
- CONSTRUCTION SUPPORT
- COMMISSIONING
- TURN-KEY SYSTEMS



## PROVIDING ENGINEERING RESOURCES YOU NEED TO COMPLETE PROTECTION, CONTROL, AUTOMATION & INTEGRATION PROJECTS

Casco Systems is an engineering and system integration firm focused exclusively on the power generation and delivery markets.

Founded in 2001 to provide Control and Automation Solutions, CASCO has expanded to offer integration, automation, communication, protection and control systems to clients in the electric power industry throughout North America.

Our team of engineers and integration specialists are focused exclusively on providing technology solutions that are reliable, functional and cost effective. We bring an understanding of the demanding requirements necessary in utility grade protection and automation systems to every project, along with the desire to assist clients maximize return on their technology investment.

## TECHNOLOGY CONSULTING FROM EXPERIENCED DOMAIN EXPERTS IN THE POWER TRANSMISSION & GENERATION INDUSTRY

Our team offers experience with a wide variety of platforms typically found in the power generation and transmission industry. In addition our domain knowledge allows us to implement secure and reliable systems in a safe & efficient manner.

We offer experience with the following technology and products:

- Protection & Control (P&C) Engineering
- Protective Relay Setting Development
- Supervisory Control & Data Acquisition (SCADA) Configuration
- Human Machine Interface (HMI) Design
- Remote Terminal Unit (RTU) Programming
- Programmable Logic Controller (PLC) Design & Programming
- Network Design & Configuration
- Cyber Security Systems & Planning

## A TRUSTED PARTNER INVESTED IN YOUR SUCCESS

Casco Systems has built a reputation as a trusted partner to a range of owners, operators and service providers across the industry. Our resources, knowledgebase, commitment to success, and work ethic have allowed us to enjoy decades long relationships with multiple client partners. We look forward to enjoying long term relationships with each client by delivering certainty to each and every project.

## SUBSTATION INTEGRATION

Casco Systems engineering and design team offers experience ranging from simple RTU replacements to complete substation automation.

We have experience on many projects implementing HMI's, RTU's, and Data Concentrators from leading vendors including SEL, GE, ABB & BASLER protective relays; SEL-2032, SEL-RTAC, Subnet Solutions SSNET, Novatech Orion, Cybectec SMP Gateway, GE D20, Schneider Televent and other RTU's & Data Concentrators.

## POWER GENERATION

Casco Systems specializes in the protection, automation and control of hydroelectric stations, water flow & level regulating facilities, and balance of plant equipment.

We have automated many plants including automatic start & stop sequences, water level management, equipment condition monitoring, and regulatory compliance & reporting.



## ADVANCED SUBSTATION PROTECTION & CONTROL PLATFORMS

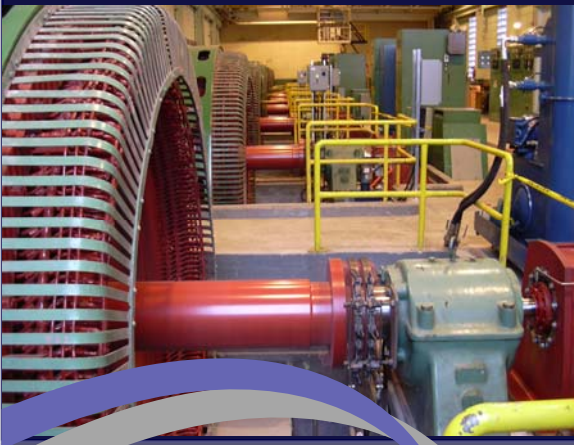
Our team developed a new integration platform utilizing the IEC-61850 standard for the Maine Power Reliability Program (MPRP). During this multi-year, \$1.4B project Casco Systems developed standards, programs & systems for multiple 345 kV, 115 kV, and 34.5 kV Bulk Power Transmission Substations. Casco was responsible for all substation integration including the Station HMI, RTU, multiple transformer condition monitoring & control IED's, and IEC-61850 GOOSE / MMS Message Configuration. To date Casco Systems has completed seven bulk power IEC-61850 based stations and multiple traditional remote end upgrades.

This platform has advanced features and limits the use of hardwired interconnects and devices, moving all but the most critical tripping and sensing "onto the wire". The end result is an advanced protection and control platform with a much simpler (and lower cost) hardware design. The project included advanced features like equipment monitoring and data logging, fault event record automatic retrieval and storage, breaker & switch operation logging, Cyber Security and remote HMI access.

## RELIABLE POWER PLANT AUTOMATION & CONTROL

The Casco engineering team has completed projects at many hydro, wind, solar and biomass generating plants across the US and Canada. The knowledge gained and lessons learned include familiarity with the following:

- Hydroelectric Plant Automation
- Pumped Storage Control
- Rubber Dams Monitoring & Control
- Minimum Flow, Taintor, and Bascule Gate Control
- Governor Upgrades and Replacements
- Protection & Control Systems
- Power Distribution Systems
- Plant Automation & Integration Systems





## TOMORROW'S SMART GRID, TODAY.

Casco Systems engineering and design team offers the knowledge gained working on the front line of power plant automation and substation integration projects.

At our core is a team of dedicated engineers with a "get it done" attitude, the knowledge on how to "do it right" and the drive to succeed in fast paced and challenging situations.

With these skills and our experience using the latest technology, including the emerging IEC-61850 GOOSE & MMS protocols, Casco is positioned to help our clients bring tomorrow's Smart Grid to their project today!



## ENGINEERING, TECHNOLOGY AND SUPPORT STAFF

### Kevin Mahoney, President - Integration Architect/Engineer

Mr. Mahoney is the founder and President of Casco Systems. His expertise includes project management, plant automation and substation integration. He has over 25 years of power plant integration experience and has been providing substation integration services for more than 15 years. Kevin has an in-depth understanding of common industrial & utility networks / protocols including: DNP3, Modbus, Modbus TCP, GE SRTP, GE SNP, GE Genius, AB DF1, AB DH485, as well as significant experience with IEC-61850 MMS & GOOSE. He offers the technical skills to implement Substation Integration, Power Plant Automation, Data Concentrator, PLC, HMI, and SCADA systems; and the management and communication skills necessary to guide projects to success.

### Todd Ward, PE, Engineering Manager

Mr. Ward is an electrical engineer with a history of many successful automation, system integration, programming, and commissioning projects at hydroelectric and electrical substation projects. His experience includes electrical design, installation, and commissioning of generation and substation control systems, programming of PLC/SCADA/HMI systems and configuration of communication networks. These projects involved the integration of various intelligent devices into a system architecture providing a robust real-time control system. Todd has in-depth experience with multiple platforms including GE IP PLC's, SEL-RTAC, Cybectec SMP Gateway, and SEL-2032 platforms.

### Douglas Beale, PE, General Manager / Project Manager

Mr. Beale has over twenty-five years' experience in project management, process development, continuous improvement and mechanical engineering. His experience includes management of hydro generation upgrade projects and as Site Manager for two wind farms. Mr. Beale is a certified Six Sigma Blackbelt and has extensive experience with Managing Projects / Technical Oversight, Strategic Planning & Execution, resource allocation, budgets, schedules, and QA/QC processes.

### Paul Shea, PE, Senior Protection & Controls Electrical Engineer

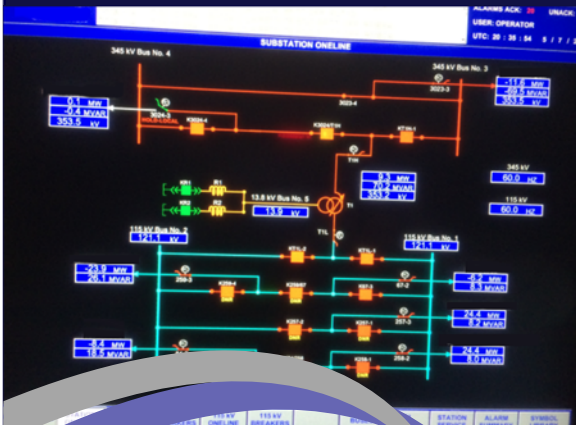
Mr. Shea brings over 25 years of utility experience to our team and has a deep background in power transmission and generation. Mr. Shea has a wide range of experience managing the electrical interconnection of industrial and commercial facilities to the electric grid; managing the calibration and functional testing of protection and control relays for hydroelectric generating facilities as well as managing NERC compliance testing for transmission and substation facilities. He has performed various protection engineering functions including modeling, settings calculations, design review, development and commissioning.

### Kirk Wishowski, PE, Senior Automation and Controls Engineer

Mr. Wishowski is an electrical engineer with over 32 years' experience in hardware & software development, commissioning and project management. His experience includes electrical design, programming, commissioning and troubleshooting of control systems, PLC/SCADA/HMI systems, and communication networks. This experience was gained through a variety of tightly scheduled retrofit projects as well as new construction. Kirk's project management skills have been proven time and again through the completion of difficult projects on time and within budget.

### Kevin Coyne, Automation & Integration Specialist

Mr. Coyne is an electrical engineer who has over 25 years of industrial automation and integration experience. His experience includes electrical design, programming, and commissioning of control and integration systems including extensive experience programming and commissioning IEC-61850 based substation integration platforms.





#### **Jonathan Willette, Automation & Integration Specialist**

Jon is a degreed engineer who has designed new and retrofit Distributed Control Systems, Gas and Steam turbine governor control systems, and turbine and generator protection systems. He has performed services for industrial and utility clients including frame steam and gas turbine designs from multiple OEM's. Responsible for technical solution development, project cost estimation, proposal development and bid generation as well as design, programming and commissioning.

#### **Chris Parent, Automation & Integration Specialist**

Chris is an integration engineer with experience in substation integration, HMI and SCADA programming. He is familiar with Allen-Bradley PLC 3/5 process control systems and programming and possess a solid understanding of the fundamental theories of Alternating and Direct Current circuits including single and three phase power systems including Synchronous and Inductive electric machinery. He is experienced with the development and implementation of analog amplifiers, filters, rectifiers and power supplies. Mr. Parent has in-depth experience with the Intel 8051 Microprocessor in addition to knowledge of digital logic circuit analysis and design.

#### **Eric Douglass, Automation & Integration Specialist**

Eric is an Electrical Engineer with over five years' experience in electrical design, programming, and commissioning of control and integration systems, PLC/SCADA/HMI systems, and communication networks. Mr. Douglass has direct experience implementing and programming automated control systems focusing on the application of PC, PLC, & software technology. Mr. Douglass has helped automate over 10 hydroelectric stations and has implemented a nationwide SCADA system connecting more than 70 plants using multiple communicating protocols. Mr. Douglass has designed numerous automation systems, relay protection systems, and auto synchronization systems.

#### **Ron Riggi, Automation & Integration Specialist**

Ron is an electrical engineer who offers skills & experience in a range of disciplines including operating systems and computer technology.

#### **Edwin Meserve, Automation & Integration Specialist**

Ed is an electrical engineer who offers skills & experience with computer networks and systems. Experience includes configuration, Factory Acceptance Testing and Field Commissioning on a large scale SCADA project.

#### **Jordan Millington, Electrical Engineering Intern & Cyber Security Specialist**

Jordan is a student of Electrical Engineering Technology at the University of Maine Orono, currently working part-time for Casco Systems. Jordan is gaining experience in Cyber Security, Networking and Integration Engineering. He offers a wealth of knowledge with automation and computer based systems. He will be joining our staff full time in the Spring of 2015.

#### **Chris McGonagle, Protection & Control Specialist**

Chris is a student of Electrical Engineering Technology at the University of Maine Orono, currently working part-time for Casco Systems. Chris is gaining experience in Protection & Control Engineering. He will be joining our staff full time in the Spring of 2015.

#### **Alan Grant, Information Technology Manager**

Alan is an accomplished senior executive and information technology professional with key strengths and deep experience with Windows Operating Systems, Desktop Support, Networks, Servers, Cybersecurity, Virtual Private Networks and System Virtualization.

#### **Debra Ivers, Business Administrator**

Debbie has over twenty years' experience in office management and administration in the power engineering industry. She is experienced in performing purchasing, finance and human resource functions. Mrs. Ivers has in-depth experience providing administrative support to project management, engineering disciplines, marketing/business development and document control.

- ◆ ENGINEERING
- ◆ PROTECTION
- ◆ INTEGRATION
- ◆ COMMISSIONING
- ◆ TRANSMISSION
- ◆ GENERATION
- ◆ TURNKEY SYSTEMS
- ◆ TECHNICAL SUPPORT

Casco Systems is committed to helping our clients leverage the latest advances in technology to efficiently and reliably operate today's Smart Grid applications.

Apply our experience on your next project and see why the "Control and Automation Solutions Company" has gained a reputation for excellence.

Contact Kevin Mahoney at 207-712-0590 or by email at [kevin@casco-systems.com](mailto:kevin@casco-systems.com) to discuss how we can help you



simplifying Integration, Protection & Control

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