JEFFREY H. FENN, P.E.
Director,
Electrical Engineering

SGC ENGINEERING, LLC
• Civil Design & Survey Engineering
• Environmental & Regulatory Permitting
• Electrical Power Systems Engineering
Offices - Westbrook & Orono, Maine

Academic Background

Bachelor of Electrical Engineering Technology, 1981
Northeastern University, Boston, MA

Numerous short technical courses related to Utility engineering

Professional Registrations

Professional Engineer Maine (#10110)

Professional Affiliations

Member IEEE, PES and NSPE/MSPE

INTRODUCTION

Mr. Fenn is the Director of Electrical Engineering for SGC Engineering. He has over twenty years of experience providing engineering for electric utilities and projects. He has been directly responsible for numerous projects in the planning, design and construction phases in the areas of: protective relaying, system planning, short circuit studies, power flow studies, substation design and testing, equipment specification and procurement for substations, generation control and interconnection with utilities; project planning, administration, and coordination; permit acquisition; regulatory reporting; cost estimating; and construction observation and reporting.

The projects completed with Mr. Fenn's participation and under his direct technical supervision balance the requirements for new or rehabilitated facilities and associated site improvements with the requirements for long-term sustainable development. He has specific experience in the following areas:

- New England Power Pool (NEPOOL) Reliability Committee: Involvement and interaction with various planning committees or subcommittees that are part of NEPOOL.
- Substation Design Engineering: Expanding existing facilities or designing new ones. Strong experience in structure and equipment specification as well as control systems. Involved with some of the first Substation Integration (computer control and data integration systems in the substation) in utilities in the United States.
- Project Management: Managing simple and complex projects for electric utilities that include all aspects of the project, from budgeting and estimating, to design, permitting and construction.
- Electric System Planning and Protection: Prepared short circuit studies necessary for protection and equipment specification. Developed power flow studies to determine acceptable means to operate a system. Also, determined coordination from simple overcurrent to complex distance schemes with communication.

REPRESENTATIVE PROJECTS

- **345kV Transmission Line, Maine to New Brunswick:**
  - Managed the system impact study, coordinating the effort with interested and impacted parties including NBP, MEPCO, CMP, BHE, and ISO-NE.

- Provided information and discussion forums with the steady state and stability peer review groups of ISO-NE and NEPOOL.
- Presented and received approval from the NEPOOL Reliability Committee, whose approval paves the way to construction of the project.

- **Maine Independence Station Interconnection:**
  - This is a 500MW combined cycle generation station interconnected with the BHE and NEPOOL electrical systems.
  - Project management of the interconnection and electric utility facilities.
  - Completed system impact study, including approval at NEPOOL TTF (steady state peer review study group), STF (stability peer review study group) and RC (Reliability Committee that approves and accepts the system changes).
  - Weekly meetings with all involved parties including the project developer to review and coordinate the utility installation work with the plant needs.
  - Overview of design, procurement and installation of a 115kv transmission line and associated right-of-way.
  - Rebuild of four other 115kv transmission lines.
  - 115kv substation expansions at 2 locations for this project.
  - Coordinated efforts with neighboring utilities in regards to their electric systems to accommodate this project.
- **Great Lakes Hydro (GLHA) Interconnection project:**
  - This is an interconnection between two separate electric utilities. The existing system was designed and operated to meet mill loads and needs and was operated as an electrical island with a low voltage tie with the local electrical utility. The tie was eliminated and a new 25mi 115kv transmission line constructed along with substations at both ends and system changes in other areas to accommodate the changing needs of the island electrical system.
  - Responsible for all interaction with NEPOOL and ISO-NE, including the system impact study, review with appropriate committees, and approval.
  - Interacted with the Maine Public Utilities Commission supplying them with the technical details of the project (including study details) and supporting the application of public need and convenience.
  - Responsible for the engineering and construction of the 25 mi. transmission line, as well as a 115kv substation and several other changes to accommodate this project.

- **Chester Static VAR Compensator:** Involved with the study, design and commissioning, and later operation and maintenance of the Chester SVC. This is a +450, -150 MVAR facility installed to permit heavy transfers of energy (2000MW) from Hydro-Quebec to New England, and keep the Maritimes Canada from having system stability problems.
- **Scott's Hill Substation SI:** Envisioned and championed the development and design of the first Substation Integration (SI) installation at BHE, and one of the first in the US. This included specification of intention (i.e. why were we doing this), intended outcome of the project, and suppliers to make it happen.
  - Developed a system that was mostly "off the shelf" to keep it as economical as possible.
  - Designed an operating philosophy that would allow construction folk to easily accept and operate
  - Allowed remote access to information that otherwise would have required a 3 – 5 hour round trip to acquire.

TECHNICAL / MANAGEMENT SKILLS

- **High Speed Protection Scheme:** Designed and installed improved protection schemes in the BHE system.
  - These schemes improved system response to faults, reducing impact to area industrial customers.
- **Fast track Project Philosophy:** Applied fast track project management and design.
  - Allowed improved start to finish schedule.
  - Ensured information and materials were available to the field crews when needed to keep on schedule.
- **Generation Control System Upgrade**: Oversight of hydro generation control system upgrades from controls that were designed and installed up to 100 years ago, to control systems that were based on Programmable Logic Controllers (PLC's)
- **Utility Engineering Group Management:**
  - Responsible for budgeting and schedules.
  - Reviewed correspondence to ensure consistency with company policies and procedures.
  - Prepared and oversaw construction estimates and startup.