

HLB Engineering

My experience includes high voltage systems from 345kV down to industrial plant 480V systems and some work on New England's HVDC link with Hydro Quebec. As a project manager and engineer, I've worked in generation plants and electric power substations, both transmission and distribution – in the planning, design, operations and maintenance [O&M] capacities. This work includes system outage analysis & substation testing.

Utility work includes new design and retrofit work at power plants and their substation yards, electric power transmission and distribution substations. Power plant work includes support for hydro, natural gas-fired [combustion turbine], and conventional coal-fired sources. Substation work includes design and construction supervision for new transmission lines, distribution feeder get-aways, breakers [oil, SF₆, air blast, vacuum], free standing CTs, VTs and PTs, transformers, grounding transformers, reactors, capacitor banks, air break switches, control buildings. Transmission line and substation siting and other developmental design work and studies.

Utility work also includes SCADA, relaying, and control design for all of the above descriptions including short circuit analyses and relay setting sheet calculations throughout the installation of the facilities. Work also includes design, review, and approval for Independent Power Plant [IPP] and Cogeneration plant interconnects to major utility systems at transmission & distribution voltage levels. Retrofit work includes removal of asbestos panels and wiring, paralleling of new power transformers with existing ones, connection and operation of portable distribution substations. Utility experience includes indoor and outdoor projects, new and old, in AK, MA, RI, NH, VT, IL. Experience coordinating other projects with utilities in PA, NC, TN, and FL.

A profile with complete descriptions of actual and working generation, transmission, and distribution engineering projects where design and construction management was required is available upon request. I offer this supplement for reviewers who have the mistaken impression that engineering is only performed in an airless office somewhere removed from where the action is. Engineering is first and foremost an in-the-field profession. I've the parka, dusty blue jeans, flannel shirt, and steel-toed boots w/ photos for proof, if required.

Engineering work in all fields has included supervising staffs of engineers, technicians, electricians, and other project personnel including accountants and advising legal counsel. Work includes preparation of budgets, schedules, bills of material [BOM], and critical path information. I have prepared project documents including drawings, specifications, and engineer's estimates. I've field experience supervising construction. I have specified and approved equipment and material for approval. I have experience working in the field preparing completion reports and as-builts for inclusion in final project document sets. I have sealed engineering documents. This entire range of activity is given the broad name of EPC – Engineering, Procurement, Construction: one I've spent my entire professional career in. Work includes running field offices at the site.

A graduate engineer for the last 26 years; a licensed professional engineer for the last 22 years; I have the usual electrical engineering degrees – B.S.E.E. and M.S.E.E. – from an accredited ABET university, the University of Alaska at Fairbanks [UAF]. My course work at UAF was in power systems and their control. I am a graduate of the U.S. Navy Nuclear Power School and a former nuclear power plant operator and technician, ashore and at sea. All nuclear training and work was in operational reactor plants.

I'm licensed to practice electrical engineering in Pennsylvania and Alaska [my home]. I am a graduate of the U.S. Navy Nuclear Power School and a former nuclear power plant operator and technician. Ashore and at sea.

In a previous capacity, I was well versed in the standards of operating entities of independent system operators [e.g., NEEPOOL] and regional reliability councils [e.g., NPCC]. I co-authored and managed all of the

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initial inter-operating contracts for the power pool in the rail belt of Alaska [Anchorage-Fairbanks regional system]. I managed the budget for this pool for the State of Alaska.

In my career managing the Alaska Intertie and the Solomon Gulch Hydroelectric facility for the old Alaska Power Authority, I've had to conduct FERC inspections of power facilities, negotiate with property insurance firms [e.g., Hartford Steam Boiler, Marsh McLennan], state agencies [e.g., Natural Resources], third party interveners to projects. I've filed FERC exhibits and state applications for power project operating permits.

As a licensed practicing professional engineer [P.E.], I taught the fundamentals of system stability and protection to engineers, technicians, dispatcher, and system operators – both as an engineer at a major United States utility [New England Electric System] but also at the first school for relay engineers and technicians at the UTA's Energy Systems Research Center [ESRC]. I have published reports and studies.

My knowledge of engineering analyses and studies is vast. These include power flow, system stability, grounding, short circuit, relay coordination, others related to electric power utility systems. I've experience with AutoCAD; MathCAD; other computer software for simulation of electrical systems.

I've used programs provided by third party vendors [e.g., EPRI, PECO, Electrocon, ASPEN, Cooper Power System]. I have used these programs in a professional capacity both as utility employee and as a consultant to the industry and I've authored the studies and reports that typically follow them.

I am thoroughly grounded in the knowledge and application of the National Electrical Code [NEC] and the National Electrical Safety Code [NESC]. I have some familiarity with the Canadian Electrical Code, C22.1-06. I have experience working with state and federal inspectors and listing agencies [UL, FM] on power projects.

To supplement my project management experience, I've completed college courses in engineering economics, law for engineers, contract law, Bayesian analysis [power plant outage scheduling & cost estimating]. In addition, I've attended employer-sponsored seminars and in-house workshops on public speaking, statistical analysis for failure prediction of engineered systems, construction specifications [CSI], and technical reporting.

I've an operating system manager's in-depth knowledge of deciphering annual reports, quarterly reports, cash flow statements, statement of earnings, income statements. Experienced in data mining using Microsoft EXCEL in pulling out key information and consolidating it for more "useful" reporting and presentation. I have experience with computer simulation involving random processes, Monte Carlo analysis, probability, statistics.

Communication skills include preparation of reports and summaries to management, to the public, and to other engineering organizations. I have been deposed, provided trial testimony, and provided reports to court – as an expert witness for the suits brought by others against others. I am consulted from time to time by newspapers to explain or provide background on electrical engineering matters that impact the public.

Member – Institute of Electrical and Electronics Engineers [IEEE]

Member – National Society of Professional Engineers [NSPE]

Member – Pennsylvania Society of Professional Engineers [PSPE]

Have brains, advanced degrees, professional licenses, deep background, will travel.

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