Patrick LaPointe, P.Eng.

Senior Mechanical Engineer and Principal PCLL Engineering

Professional summary

Patrick has over 40 years experience in mechanical engineering design. His areas of expertise include energy audits for both large commercial and small industrial clients, static and dynamic pipe stress analysis and pressure vessel design and API 650 tank design, ASME efficiency test on generating station boilers, material handling, construction supervision, field routing and piping layout designs.

Education

Bachelor of Science in Mechanical Engineering, University of New Brunswick, Fredericton, NB 1970

Memberships

Member, Association of Professional Engineers and Geoscientists of New Brunswick
Member, Association of Professional Engineers of Nova Scotia
Member, Professional Engineers and Geoscientists Newfoundland and Labrador
Member, Association of Professional Engineers and Geologists of Alberta Member,
Toastmasters 5 years

Languages

English and French (written and spoken)

Project Experience

60 MW Steam Turbine (Lead Piping Engineer)
Routing, stress analysis and detail design of all pipe supports for steam and condensate piping to a 60 MW steam turbine.

ALMA gas production platform
Static and dynamic (time history) pipe stress analysis for gas platform piping

Lime Kiln Rebuilds
Lead mechanical engineer for two lime kiln rebuilds in 1994 and 1996 at a pulp mill in New Brunswick. This rebuild was comprehensive; new burner, new kiln tires, new trunnion rollers, new pre-coat filter, vacuum pump.

New Lime Kiln Installation
Lead piping engineer in support of the installation of a new lime kiln installation at a pulp mill in New Brunswick. This was a complete installation and included all feed end equipment and discharge end equipment; all duct work, fans and electrostatic precipitator.

Storage Tank Installation (Lead Mechanical Engineer)
Design services for all mechanical aspects of a high density storage tank installation at a pulp mill.

Power Boiler (Lead Mechanical Engineer)
Bio gas incineration in power boiler.

Slaker and Precoat Filter Installation (Lead Mechanical Engineer)
Slaker and precoat filter installation complete with all process pumping, pipes and control valves.

Moving Bed Bioreactor (Lead Mechanical Engineer)
Detailed design for the installation of a moving bed bioreactor and associated piping. The piping and the reactor were duplex stainless steel. The bioreactor was an API 650 tank design.

Recovery Boiler
Lead Mechanical Engineer for a complete recovery boiler project. Seismic piping design to earthquake zone 4 was required.

French Fry Plants
Lead Mechanical Engineer for the design of two French fry plants. Portage la Prairie Manitoba and Easton Maine.

Paper Mill Piping
Stress analysis of a 24" diameter steam line, 800 feet long, feeding a paper mill. A time history dynamic analysis was conducted on this line.

24" Diameter Pulp Stock Dump Line Stress Analysis (Design Engineer) 10" Diameter Digester Liquor Fill Lines Waterhammer Stress Analysis (Design Engineer) Digester Cold Blow System (Design Engineer)

Engineering study for a digester cold blow system and the preparation of appropriation grade cost estimates.

Nuclear Generating Station (Design Engineering)
Dynamic pipe stress analysis and hydraulic transient analysis of piping systems at a nuclear generating station. Analysis and recommendations of pipe support modifications to a 30" diameter feedwater line. Mr. LaPointe has also conducted a time history stress pipe stress analysis of a turbine trip event. As a result of this analysis, extensive and large condenser dump line pipe supports were designed and installed.

OSB Mills (Design Engineer)
Design of large hot thermal oil piping system in three OSB (Oriented Strand Board) mills.

450 MW Supercritical Generating Station Boiler (Piping Design Engineer) Prepared all pipe specs, routed and stress analyzed boiler feedwater piping.

Utility Station Fuel Conversion (Senior Mechanical Engineer)
1000MW utility station fuel conversion from Bunker C to Orimulsion fuel. Responsibilities included system design for all Orimulsion fuel supply and glycol heating systems for Orimulsion fuel.

Grand Lake Generating Station (Project Manager)

Stress analysis of a 12” diameter high pressure (1500 psig) main steam line at the Grand Lake Generating Station.

Digester Pressure Protection (Project Manager)
Investigation, recommendations and design for the over pressure protection of digesters. Dynamic analysis of the digester blow line.
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Kraft Mill (Project Manager)
Detailed design work and project management services for a blow heat recovery and noncondensable gas incineration system in a kraft mill.

New Brunswick Power Utility Station Tank Farm Piping
All aspects of tank farm piping. 16" diameter by 3000 feet long, insulated and heat traced. Hydraulic design for line size determination, friction loss calculations, pipe stress analysis and detail design of all pipe supports.

About PCLL Engineering Ltd.

PCLL Engineering Ltd. was founded in 2014. Over the time period of 2014 to the present, PCLL Engineering’s list of projects include:

Work for Fluor at the Irving Oil Refinery
Lead piping engineer for a large synchronous condenser installation at Soldier’s Pond in NL
Twin Rivers mill in Edmundston NB
Lead piping engineer for a green field tissue mill for Irving Consumer Product in Macon, Georgia. Designed API 650 storage tanks (20). Stress analyzed all steam and condensate piping and designed all pipe supports.
Steam turbine generator installation for Hefler Lumber in Nova Scotia. NEMA SM 23 checks for compliance; turbine nozzle forces and moments.

PCLL Engineering Ltd. is an incorporated entity with its HST number and a WorkSafe NB number. They carry liability insurance and have their own engineering software to do pipe stress analysis (CAESAR II) and hydraulic transient analysis (waterhammer) using BOS Fluids.