



## LEAD MECHANICAL ENGINEER, DESIGN AUTOMATION TEAM (2009 – Present)

Develop and drive in-house mechanical design programs for rotating and stationary components of electric machines, from 1,000 HP to 60,000 HP. Partner across multiple internal teams and external suppliers. Play pivotal role in designing new product offerings and enhancing existing products. Guide team in key projects and initiatives. Oversee and mentor engineering interns, leading to many hired at GE and 1 receiving corporate award.

- ◆ **Accelerated project delivery** by heading development and release of a suite of engineering and CAD tools aligned with parallel flow ventilation design methodology.
  - Automated models, drawings, and BOMs by including 40+ subroutines, fully-integrated with CAD tools, as well as procedures to test software across all product lines.
- ◆ **Catapulted efficiency** by spearheading generation of automated drawing packages; yielded release of 6 engineering design standards with updated stator flange design calculations and parametric design package for engineering, CAD, and BOM.
- ◆ **Diagnosed and rectified 19,000 HP GE motor failure at customer gas plant in 1 month with safe, temporary solution.** Steered project to assess feasibility and implement 25,000 HP spare motor from customer's alternate site while coordinating engineering functions among 5 companies.
  - Directed review of test validations and machining modifications, definition of functional specification for coupling adapter, and evaluation of train torsional analysis; composed customer technical report.



**Removed 230 hours from design time per project.**



**Propelled quality and streamlined engineer-to-order design cycle.**

## MECHANICAL ENGINEER, REQUISITION DESIGN TEAM (2004 – 2009)

Designed a variety of machines from order to remittance, including reciprocating compressors, low-speed grinding mills, and waterwheel generator, from 1,150 HP to 30,000 HP. Sized shaft-bearing systems, performed rotor dynamic analysis, and conducted 3D modeling and finite element analysis of structural components. Participated in growth initiatives and special projects.

- ◆ **Paved the way for designs incorporated into Stator Frame Engineering Design Standards.** Managed conversion of reciprocating compressor motor product line from pedestal to bracket bearing.
  - Leveraged ANSYS for modal analysis; guided creation of 24 bracket bearing designs for 3 motor frame sizes, including lifting analysis on motor static structures via finite element analysis and hand calculations.
- ◆ **Delivered low-speed generator barring torques, overcoming fluid film in design,** which prevented low-speed barring without jacking oil system. Modified bearing liners to accept injected high-pressure oil.
  - Calculated lift-off pressure and steady state pressure; sized pump motor; supplied jacking oil unit functional specification; included interfaces between jacking oil unit and bearing in design.
- ◆ **Engineered rotor design for single-bearing, direct-coupled, 300 RPM, 11,000 HP reciprocating compressor motor** requiring avoidance of torsional resonance conditions and system inertia maintenance to limit motor current pulsations to customer specification. Pioneered torsional solution.
- ◆ **Brought machine balance grade in line with ISO 1940-1-2003 standards,** resulting in project's methodology and design principles adopted for future orders. Determined acceptable residual unbalance and designed custom balance weights to mount to rotor spider for validating balance grade during testing.



**Slashed cost per machine by \$35K.**

## Licensure & Education

<b>Licensed Professional Engineer (P.Eng.)</b> ◆ <i>Professional Engineers Ontario (PEO)</i>	2007
<b>Bachelor of Science (Honours), Mechanical Engineering</b> ◆ <i>Queen's University – Kingston, ON</i>	2004