

EXPERIENCE

BRG MACHINERY CONSULTING, LLC, Charlottesville, VA

Machinery Specialist, April 2005 - Present

Team with a group of highly qualified machinery specialists in providing a full range of rotating machinery management services. Responsible for all types of finite element analyses including structural, thermal and electromagnetic analysis. Utilize mechanical design expertise to support customer integration of magnetic bearing systems in new and existing machinery. Provide 2D drafting and 3D modeling support for all aspects of the machine design and development process.

WAUKESHA MAGNETIC BEARINGS, North Franklin, CT

Mechanical Engineer, September 2002 – March 2005

Primary activities focused on the mechanical, electromagnetic, and rotordynamic design and development of commercial magnetic bearing and backup bearing systems for large-scale industrial rotating machinery. Major bearing design/development projects included:

- Seal-less gas pipeline motor/compressor operating in an extreme pressure H₂S environment
- Nuclear power turbine requiring very high bearing surface speeds at elevated temperatures
- High-specific load backup bearings for a large power generator test stand

Involvement with these and other projects included:

- Rotordynamic modeling utilizing open and closed loop bearing transfer functions
- Time-transient numerical analysis of flexible rotor during emergency coastdown to determine maximum loads and deflections
- Structural and transient thermal finite element analysis of AMB components
- Magnetostatic finite element analysis to fine-tune bearing geometry to meet customer load req'ts
- Creation of production-quality 2D and 3D technical drawings for manufacture
- Commissioning and maintenance activities at customer sites in the Netherlands, Germany and Mexico
- Destructive tests to assess performance of candidate backup bearing wear materials

ROMAC LABORATORIES -UNIVERSITY OF VIRGINIA, Charlottesville, VA

Research Assistant, August 2000 – July 2002

Research was focused on the design and fabrication of a high-speed magnetic bearing centrifugal air compressor test stand. Research objectives of the test facility included the identification of radial and axial impeller loads at rated and off-design operating conditions, as well as investigation into surge control techniques using the axial magnetic bearings to modulate the impeller tip clearance.

EDUCATION

UNIVERSITY OF VIRGINIA, Charlottesville, VA

Master of Science, Mechanical and Aerospace Engineering, December 2004

Bachelor of Science, Mechanical Engineering, May 2000