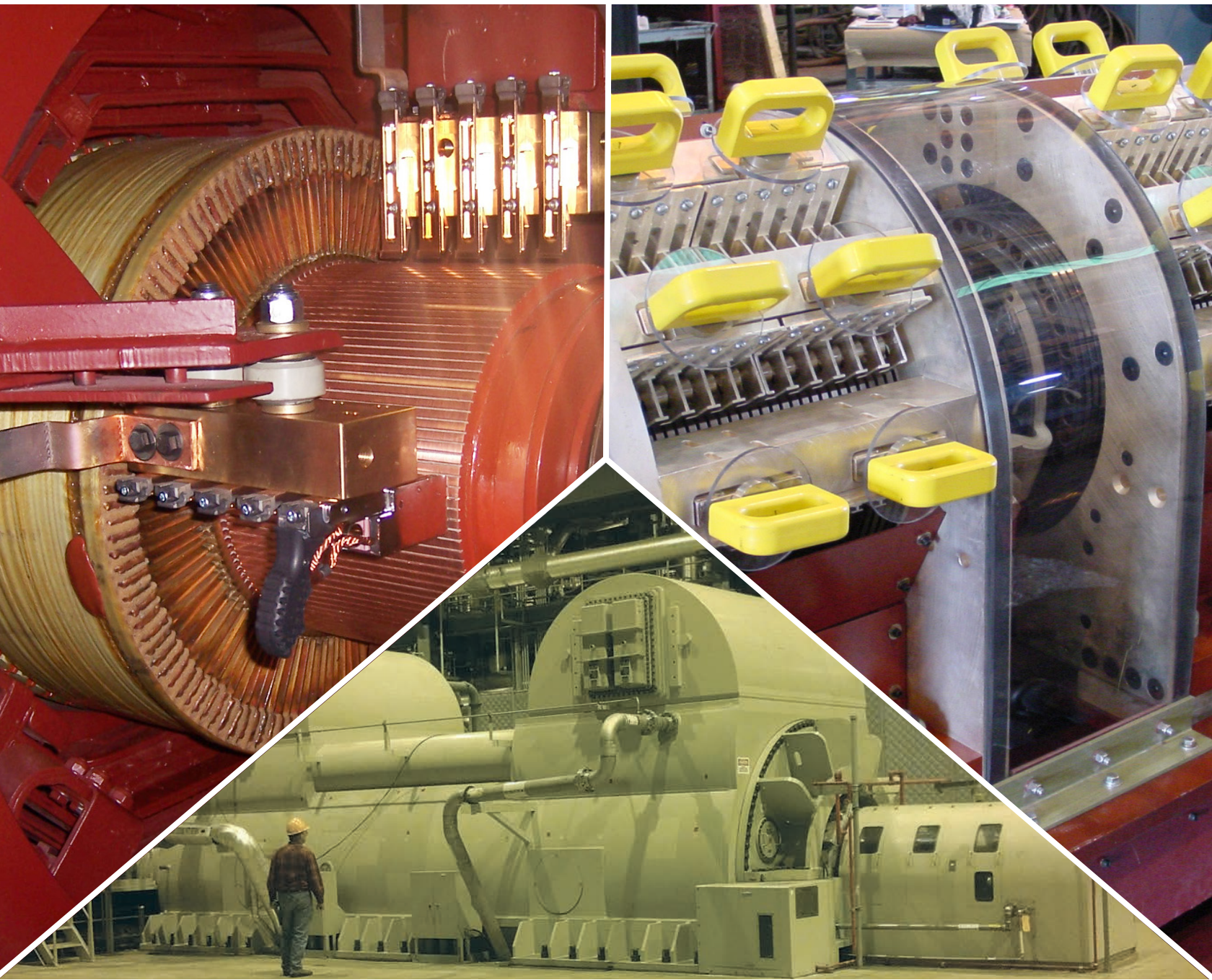


# EME

Powering Engineered Solutions





## A TEAM RESPONSIVE TO YOUR ENGINEERING CHALLENGES

ElectroMechanical Engineering Associates, Inc. (EME) has been providing engineering, design and analysis consulting services to Power Generation and Heavy Industry for over 30 years. Specializing in electrical rotating equipment, EME's significant capabilities extend to the disciplines of Electrical Engineering, Mechanical Engineering, Electrical Insulation Engineering, Bearing Design and Manufacturing.

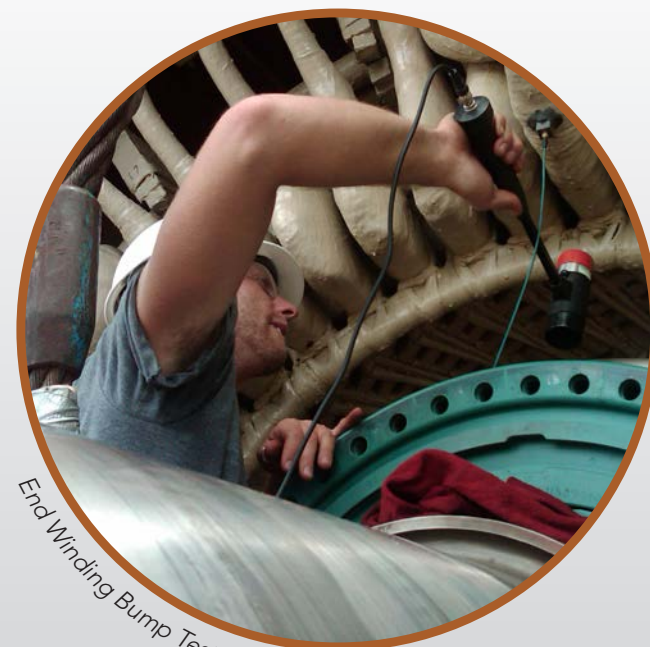
EME is staffed by a full-time team of professionals with unique skills focused on power generation and grounded in classical analytical methods. Our project implementation capabilities also comprise a number of other analytical techniques, including:

- Finite Element Analysis
- Heat Transfer and Thermal Dynamics Analysis
- Machine Ventilation Modeling and Analysis
- Electrical Network Analysis
- Vibration Testing and Fast Fourier Analysis

EME engineers and drafters work in a collaborative environment to ensure the highest quality and accuracy of our designs.

### Sectors We Serve

- *Utilities*
- *Manufacturer OEMs*
- *Service Providers*
- *Nuclear*
- *Industrial*
- *Government*



End Winding Bump Testing

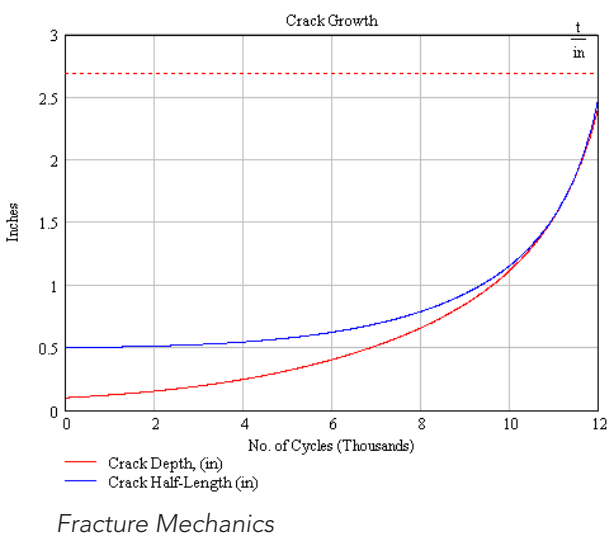


DC Stator



# ENGINEERED SYSTEMS & SOLUTIONS

EME powers engineered solutions by partnering with our clients to complement their existing internal capabilities. Our expertise centers on the unique challenges associated with designing, analyzing and building rotating electric machines – AC & DC generators and motors. We service OEMs, Power Generator/Operators, the Nuclear Industry, and Government Agencies by providing expertise in Vibration Analysis, Rotor Dynamics, Thermal and Ventilation Studies, Machine Uprates and Stress Analysis – Finite Element Analysis (FEA), Cyclic Fatigue, and Fracture Mechanics. Classical engineering methodologies are utilized to optimize operation of a variety of equipment including Synchronous Condensers, Turbo Generators, Hydro Generators, Excitation Systems, and Bearing Systems.



## MULTI-DISCIPLINARY APPROACH

The design of systems requires not only both specialized knowledge in many engineering disciplines, but also and knowledge based on experience. Much of our design knowledge is grounded in the experience of has resulted from the successes and failures that were encountered as our founders predecessors who pioneered the design and manufacturing of electro-mechanical rotating equipment with ever increasing capabilities and size.

## THE ADVANTAGE OF KNOWLEDGE AND EXPERIENCE

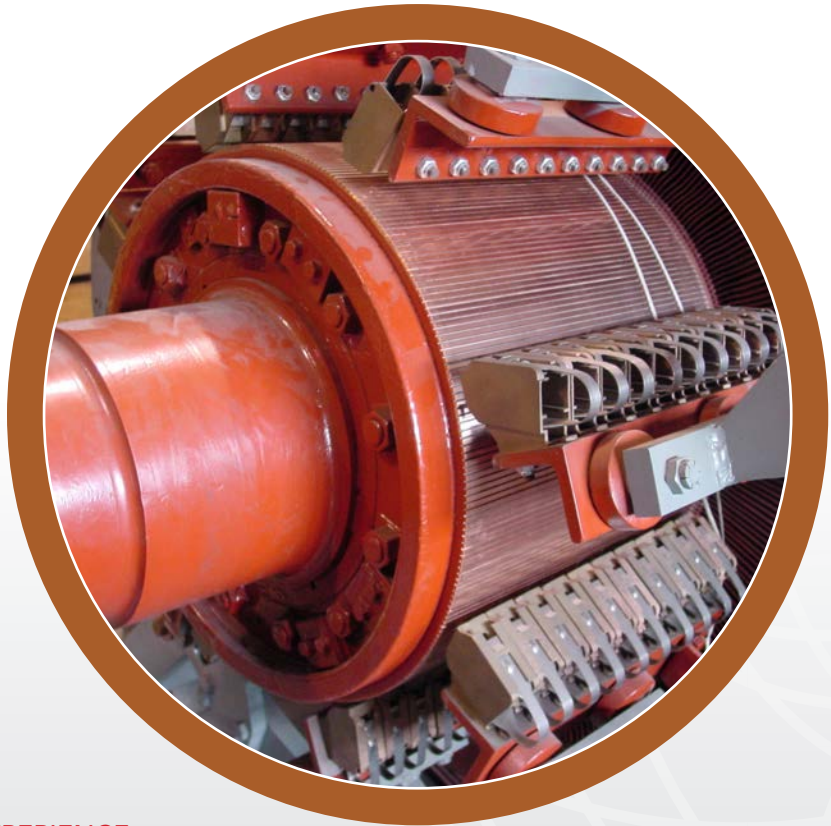
At EME we combine the expertise and knowledge of our many years of engineering, some of whom have been in this field for over a half century, with a full time staff of young, eager engineers. With this complement of talent, EME has become ahightly capable organization in the design of new and spare/replacement equipment.

# THE GO-TO SOURCE FOR ENGINEERING & CONSULTING SERVICES

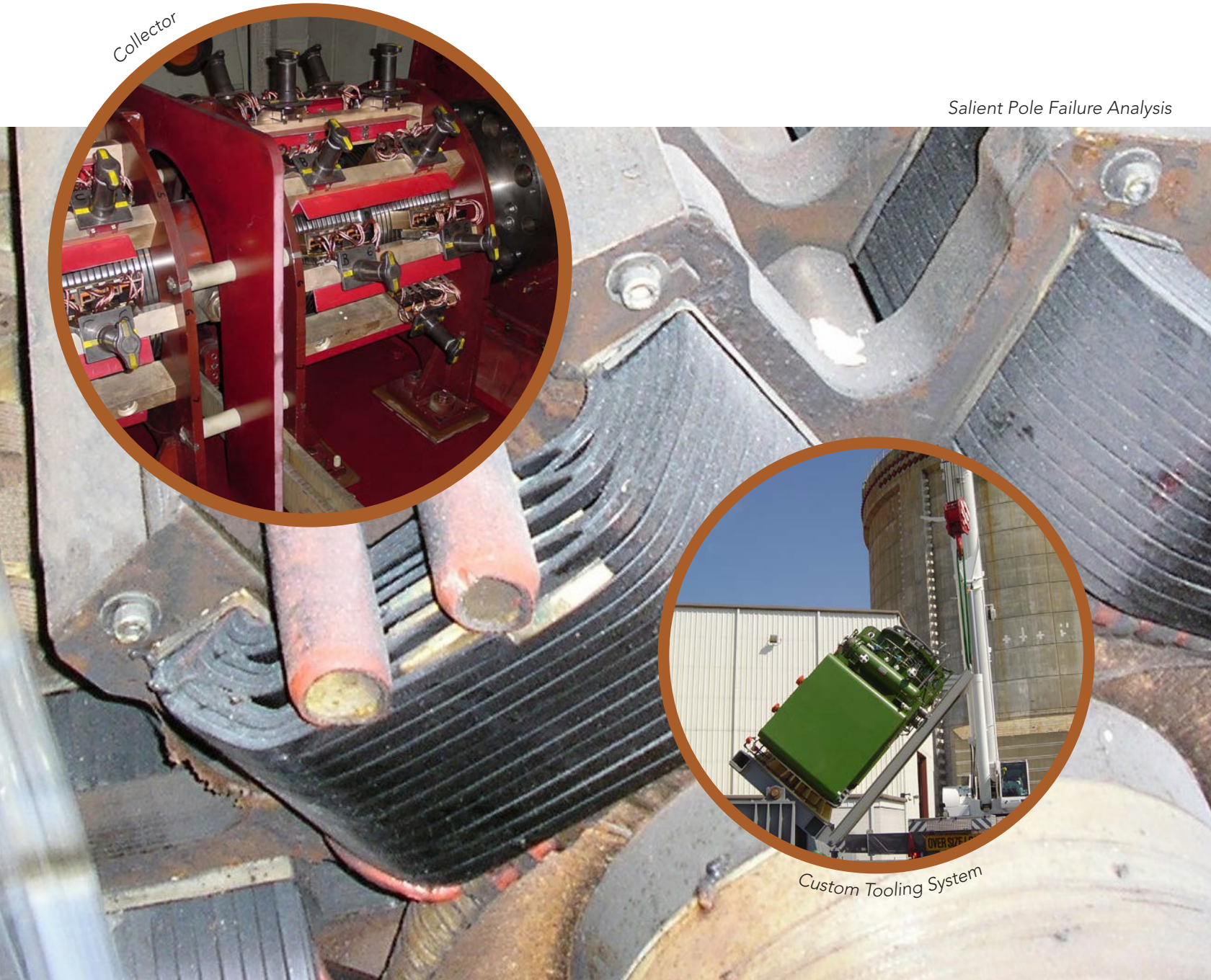
EME provides a broad range of engineering services which are tailored to meet the needs of the individual project. In cases where the customer has experience in a particular area and is looking for an independent opinion, EME can provide a simple consultation service. We are also capable of integrating with the customer's organization to provide complementary expertise, ranging from development of a conceptual design to a complete turnkey program of design, analysis, building and installation.

## OUR UNIQUE EXPERTISE:

- Brushless Excitation Systems
- Sleeve and Friction Bearing Analysis and Design
- Collector Assembly Design and Manufacture
- Reactor Coolant Pump Motor Upgrades and Expertise
- Vibration Testing and Analysis
- Modal (Bump) Testing
- Hydro Generator Field Testing
- Motor and Generator Uprate Studies
- Starting Packages for Synchronous Condensers



Commutator



Collector

Salient Pole Failure Analysis

Custom Tooling System



# HELPING CUSTOMERS EXPAND THEIR CAPABILITIES AND PRODUCT PORTFOLIO

The core of EME’s business model is a commitment to practice of Electrical and Mechanical engineering at the highest levels. This focus spans our product lines, consulting services, engineered parts and components and engineered systems and is complemented by our field service support and testing capabilities.

## CUSTOM SOFTWARE AND ANALYTICAL TOOLS

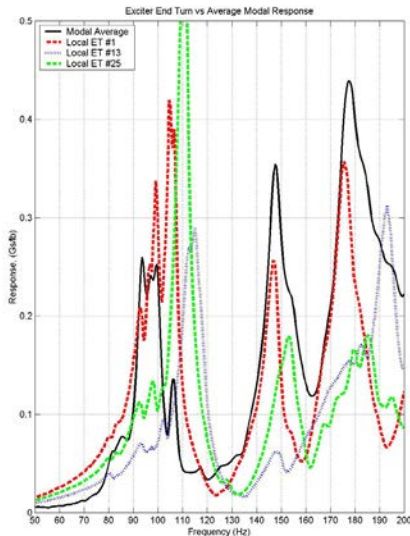
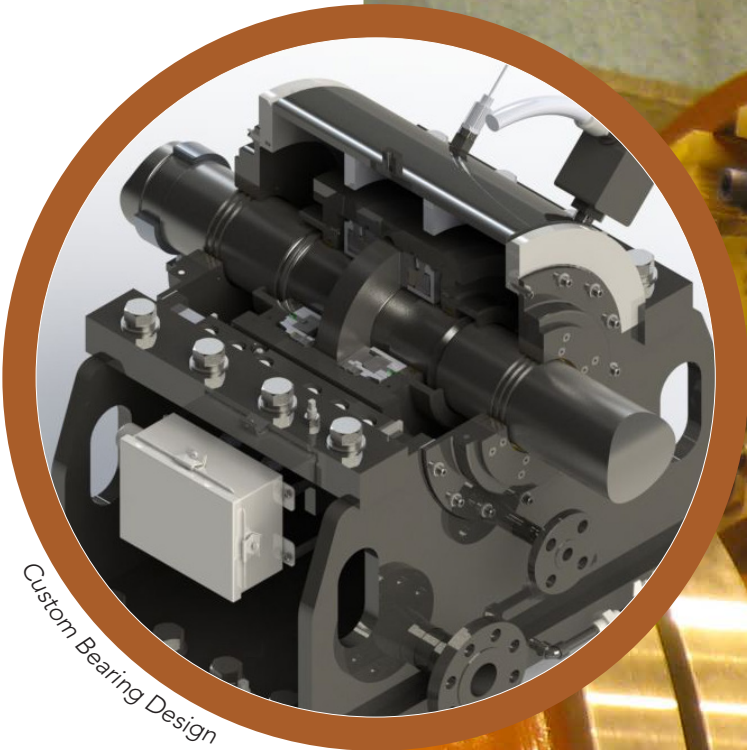
In addition to a variety of commercially available Engineering Software packages, EME has developed a number of Proprietary applications for design and analysis of electro-mechanical machines.

EMEGEN – Salient pole synchronous machine design and analysis.

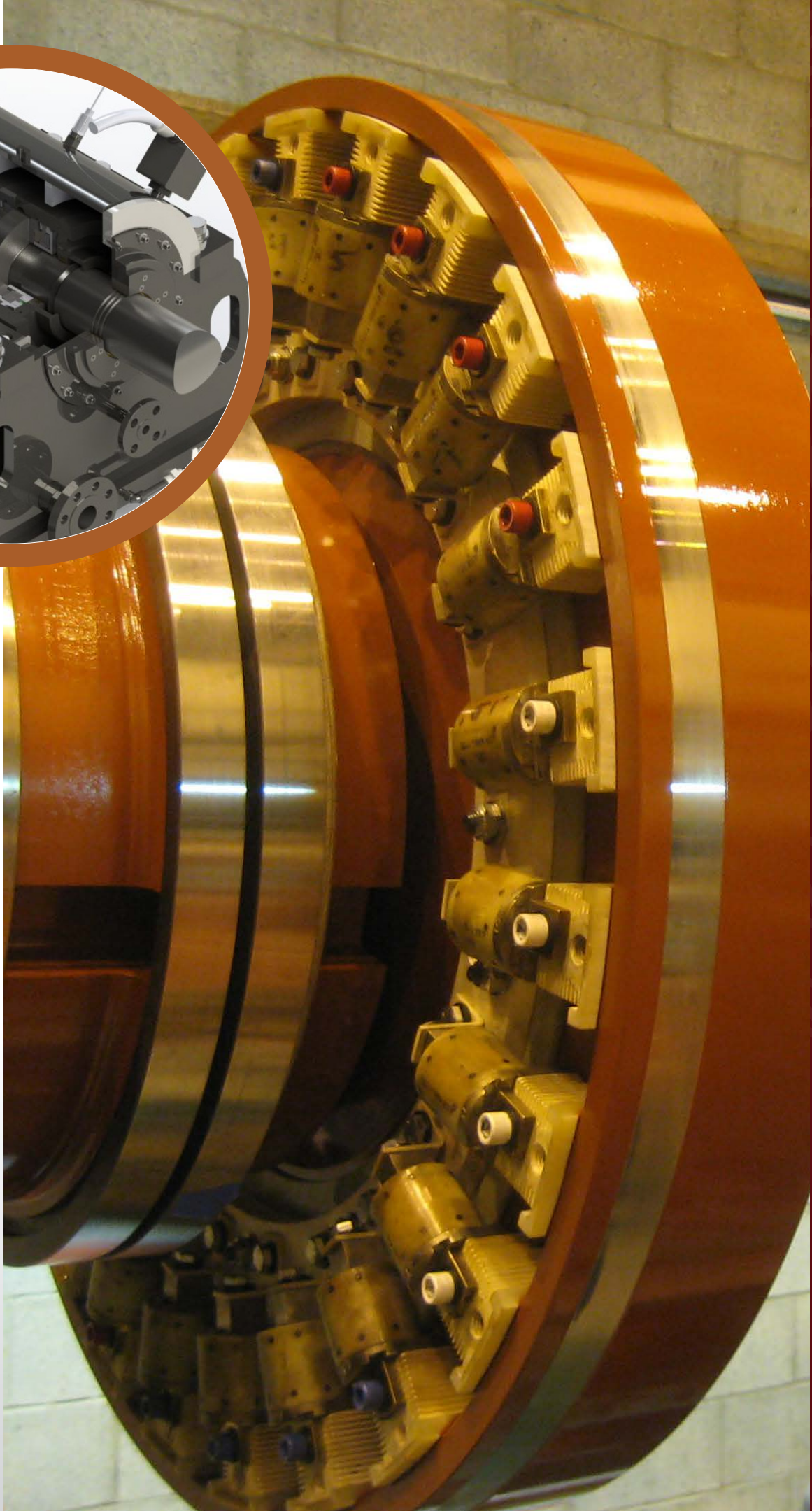
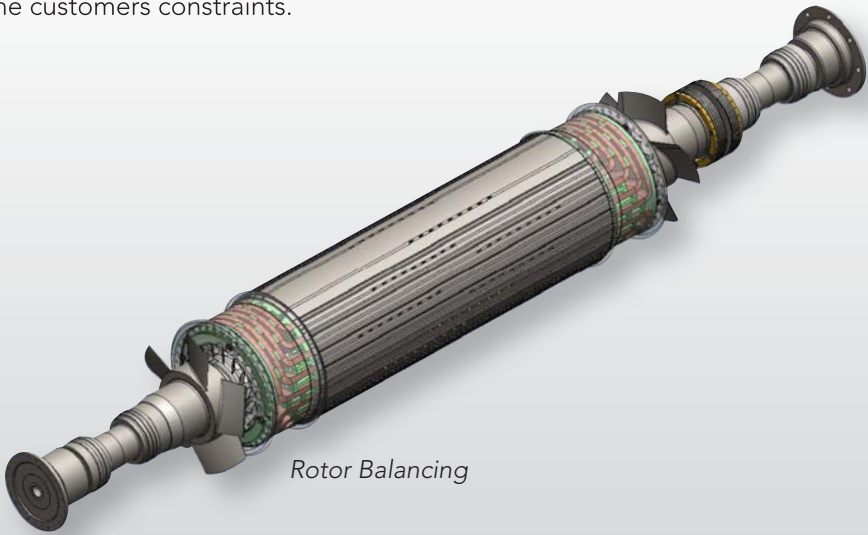
EMETURBO – Cylindrical rotor synchronous machine design and analysis.

EMEINDUCT – Induction motor design and analysis

EME Thrives on providing complex “First-of-a-Kind” solutions to complex engineering challenges – We excel at determining an approach within the customers constraints.



Frequency Response Analysis

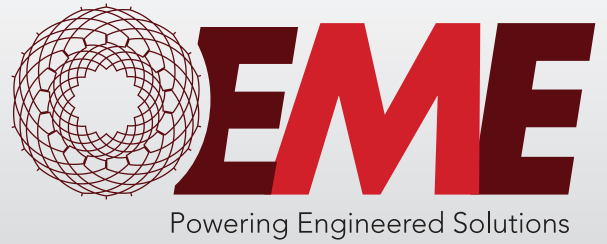


## TYPICAL PROJECTS AND SERVICES PROVIDED ARE:

- Finite Element Analysis
- Heat Transfer and Thermal Dynamics Analysis
- Machine Ventilation Modeling and Analysis
- Electrical Network Analysis
- Vibration Testing and Fast Fourier Analysis
- Failure Analysis
- Equipment Life Extension Analysis and Recommendations
- Design Improvement Recommendations
- Equipment Inspection and Testing
- Specifications Preparation and Bid Evaluations
- Manufacturing and Installation Quality Assurance
- New Equipment Designs
- Design and Manufactured Products
- Vibration troubleshooting and analysis

BUSINESS CARD HERE





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