

## Electrical Machine Design Engineer-00004883

### Description

The Electrical Design Engineer will work with development teams across Research & Technology, product development, and sustaining engineering to optimize the matching of motor and drive technology to specific application and work on the design and development of electric machines including calculations, preparing computer programs and writing the mechanical or electrical design specifications. This position will set electric motor design and performance criteria for various AC machines such as induction, synchronous, permanent magnet, and variable reluctance machines; advise manufacturing personnel in construction, specifications and procedures and assist in conducting tests; work with the suppliers and customers to arrive at the specifications and an initial sizing of the machine for a given application; perform analysis and calculations to properly size components used in design of electric machines; work as part of the team with the power electronics and control engineers to develop a total system. The Electrical Machine Design Engineer will also provide engineering support to the Business Development team on new electrical machine conceptual architectures applicable to both airborne and land based platforms; Analyze project requirements to determine feasibility of design within time and cost constraints; develop schematics, bill of material, and other documentation necessary to design, manufacture, and install the electric machine in the gas turbine operating environment; demonstrate acumen in electric motor design and supporting theory; driven auxiliaries such as pump, fans, and compressors; the use of standards affecting motor / generator design; and a working knowledge of drive systems; work with the universities and industry consultants to evaluate emerging technologies and accelerate application to solving machine performance and customer drivers and evaluate electrical machine solutions proposed by outside vendors from both electrical and mechanical point of view.

### Qualifications and experience

**Basic:**  
BSEE, ME with 9+ years of experience in electrical machine design, development and testing of Induction, Permanent Magnet (PM) or Synchronous motors and generators. US Citizenship is required and must be able to obtain a secret security clearance.

**Preferred:**  
Master or PhD in Mechanical or Electrical Engineering is preferred. The ideal candidate will have experience in working with motor/generator design software such as Maxwell Expert, SPEED or similar other software systems to perform Electro-magnetic analysis and design of electric machines; experience with Electrical & Mechanical design of low & high power machines (motors & generators); working knowledge of power electronic converters and implementations as related to the operation of electrical machines; Manufacturing knowledge of electric machines; knowledge of gas turbines and requirements of gas turbine driven generators; develop Manufacturing Systems Concepts; prior experience with Magnetic material selection and evaluation, including permanent magnet materials and electric machine development and integration as well as the ability to meet Customer Needs for Sample Build and Testing and use Finite Element Analysis software for Thermal analysis,

**Job** Electrical

**Primary Location** US-IN-Indianapolis

**Schedule** Full-time

**Opening Date** 17-Mar-2010

**Closing Date** 17-Apr-2010