



## **MECHANICAL ENGINEER, HEAT TRANSFER ENGINEERING**

*Woburn, MA*

Giving everyone in the world access to clean, reliable, affordable energy will require substantial expansion of global electricity transmission networks. VEIR is developing a new generation of High Temperature Superconductor (HTS)-based transmission lines, enabling long distance, reliable, low loss, cost-effective power transfer in far smaller right-of-ways. VEIR's innovations overcome the main barriers to transmission expansion, enabling the world to access the very lowest cost renewable power.

The **Mechanical Engineer** will assist in the design, development, and testing of VEIR's cryogenic thermal management subsystems.

### **DUTIES & RESPONSIBILITIES:**

- Use engineering analysis, models, and simulation tools to improve the performance, reliability, lifetime, and cost of VEIR cryogenic thermal management subsystems and associated components; contribute to improving VEIR's analysis techniques
- Lead the review, interpretation, and visualization of experimental data on cryogenic subsystems; use data to validate and improve thermal models and strategically plan subsequent prototype design iterations and experimental campaigns
- Contribute to building high performance team culture and work processes
- Collaborate with broader VEIR team to integrate thermal system designs with broader VEIR engineering and product development efforts, including electrical system designs
- Identify, evaluate, negotiate, and liaise with subcomponent suppliers, academic collaborators, external consultants
- Participate in documenting innovations and filing patent applications for key VEIR technology

### **MINIMUM EDUCATION/EXPERIENCE:**

- Bachelor's degree in mechanical engineering, applied physics, or related field with strong foundation in heat transfer or thermal sciences
- Demonstrated success contributing to early-stage hardware product development and commercialization
- Strong experimental background with experience integrating high accuracy sensors and data collection systems
- Specialized technical experience applicable to the position includes:
  - Experience in heat transfer, thermodynamics, thermal sciences, thermal engineering, and two-phase thermophysics
  - Hands-on experience using interdisciplinary engineering analysis tools (eg. ANSYS, Fluent, MATLAB, etc.)
  - Experience conducting thermal model analysis and correlating experimental results to model predictions

### **PREFERRED EDUCATION/EXPERIENCE:**

- MS in Mechanical Engineering, Applied Physics, or related field with emphasis in heat transfer or thermal sciences with at least 2 years thermal engineering experience
- Demonstrated creativity and experience in cryo-thermal engineering design and analysis
- Experience in the disciplines of cryogenic heat transfer and thermal engineering

### **REQUIRED SKILLS:**

- Ability to build and maintain detailed understanding of VEIR technology including design specifications and constraints
- Ability to create new system designs and/or improve existing system designs with a focus on achieving increased thermal performance, improved reliability, reduced cost, and/or improved manufacturability
- Strong verbal and written communication skills; Ability to clearly communicate goals, findings, and issues
- Ability to work in a fast-paced, team-oriented environment
- Ability to work with limited supervision; self-motivated and directed

### **PREFERRED SKILLS:**

- Ability to specify, select, and/or design cryogenic hardware including vacuum jacketed pipes, thermal insulation materials, heat exchangers, pumps, temperature sensors, and/or pressure sensors
- Ability to use CAD software tools for 3D Modeling (SolidWorks)
- Ability to use laboratory automation and data collection systems (e.g. LabView)