June 2021

SR. HTS CABLE SYSTEMS ENGINEER

Boston Area, 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 **Sr. HTS Cable Systems Engineer** will be responsible for leading the design, development and testing of low loss, high ampacity high temperature superconductor-based power cables, cable splices, and terminations.

DUTIES & RESPONSIBILITIES:

- Provide engineering expertise in high temperature superconducting cables for power transmission applications
- Lead the development and utilization of engineering analysis techniques, models, and simulation tools to design and continuously improve the performance, reliability, lifetime, and cost of VEIR's HTS-based power transmission cables and related subsystems
- Lead the iterative design, build, and testing of low loss ac and dc power cables, cable splices, and terminations
- Lead the review, interpretation, and visualization of experimental data; use data to validate and improve designs and strategically plan subsequent prototype design iterations and experimental campaigns
- Supervise a small team of engineers and technicians (2-3 direct reports initially); help build team
- Lead the team that evaluates HTS material from vendors and develops methods for material characterization and acceptance
- Collaborate with broader VEIR team to integrate HTS cable and cable accessory designs with broader VEIR engineering and product development efforts, including thermal and high voltage 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 innovations

MINIMUM EDUCATION/EXPERIENCE:

- MS in Material Science, Electrical Engineering or Applied Physics + 3 years, or equivalent experience (including significant laboratory research experience)
- Demonstrated creativity and experience in design of power cables utilizing high temperature superconducting tapes
- Strong experience in experimental evaluation of power cables utilizing high temperature superconducting tapes
- Specialized technical experience applicable to the position includes:
    - Hands on experience in electrical characterization of high current conductors and/or cables
    - Experience with integrating high accuracy sensors and data collection systems with cryogenic testbeds
    - Experience interpreting experimental results and correlating results with model predictions

PREFERRED EDUCATION/EXPERIENCE:

- PhD in Material Science, Electrical Engineering or Applied Physics with at least 5 years engineering experience working with high temperature superconducting tapes and cable systems
- Strong background in analytical design of low loss, high ampacity ac and dc HTS power cables
- Strong background in experimental testing of low loss, high ampacity ac and dc HTS power cables
- Experience evaluating the performance of high temperature superconducting tapes

REQUIRED SKILLS:

- Ability to build and maintain detailed understanding of VEIR technology including design specifications and constraints
- Ability to specify, select, and/or design systems to characterize the performance of high temperature superconducting material
- Ability to lead the development of VEIR's electric cable related subsystems, including development of low resistance HTS tape splicing processes, design of high current low loss HTS cables, and reliable, low cost cable terminations
- Ability to create new system designs and/or improve existing system designs with a focus on achieving increased 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 minimal supervision; self-motivated and directed