

## **Summer Mechanical Engineering Intern at Pecos Wind Power - Job Description**

**Date Published:** 2/22/2021

### **Role Summary:**

In this role, you will support development of Pecos Wind Power's distributed wind turbine prototype turbine design. Pecos Wind Power will rely on you to utilize your mechanical engineering expertise to develop mechanical systems that drive down the turbine's levelized cost of energy (LCOE) while achieving industry leading quality and performance requirements.

You will work under the advisement of Pecos' Mechanical Engineer (Quentin Pagnier).

Your core responsibility will be the design and analysis of the drivetrain for Pecos Wind Power's 85kW distributed wind turbine. The drivetrain, currently in pre-prototype stages of development, consists of both in-house and commercially off-the-shelf (COTS) components. You will be responsible for development of the manufactured mechanical components (hub, main shaft, bedplate, brake system, pitch system, yaw system). You will be working extensively with Solidworks software. Tasks are likely to include:

- Prepare detailed part drawings, large assemblies, castings, composites, interface drawings, various layouts for design concepts
- Tolerance stack up analysis
- Pitch/yaw system integration with relevant sub systems
- Selection of fasteners and analysis of bolting schematic
- Author design and analysis documentation

### **Who we are looking for:**

We put enormous value on practical and hands-on experience with mechanical systems. We want to know about your previous experience working on mechanical systems whether it be with cars, aircraft, farm equipment, turbines, motors, etc, and especially any experience in the wind energy industry. As a Mechanical Engineering Intern at Pecos Wind Power, it is essential that you understand not only how to design mechanical components, but also how to manufacture them and service them so they will last 20 years or more. We are not researching technology to be deployed in 20 years, we are building a wind turbine that will be deployed in less than 2. Therefore, we place extremely high value on practical and demonstrated solutions for mechanical engineering challenges.

### **Qualifications/Requirements:**

- Entering senior year or graduate studies of Mechanical Engineering or Structural Engineering.
- Fluency in Solidworks or comparable parametric modeling software.
- Knowledge of industry practices and standards used in drafting, modeling and design development/revision
- Familiarity with ASME Y14.5 1994 Geometric Dimensioning and Tolerancing (GD&T)
- Ability to interpret and apply documentation specifications such as MIL-STD-31000, Y14.5M, ASME Y14.24 and ASME Y14.100

- Practical, hands-on, and in-depth experience with mechanical systems (e.g. you've been a key contributor to the development of complex mechanical systems such as engines, agricultural equipment, turbines, aircraft, renewable energy systems, etc.)
- Excellent communication, interpersonal and presentation skills
- In depth knowledge of the product development process

**Preferred Experience:**

- Project experience in mechanical design and analysis.
- Experience with product development of mechanical components from back of the envelope brainstorming through detailed design, prototyping, and testing.
- Experience with rotating machinery: turbines, drivetrains, rotors, shafts, brakes, bearings, gearboxes, motors, generators.
- Experience with fasteners and bolted joint design, service, and maintenance.
- Experience with wind turbine design, manufacture, testing, installation, commissioning, and service.
- Understanding of corrosion and material properties.
- Basic knowledge of electrical engineering fundamentals.

**About Pecos Wind Power:**

Pecos Wind Power is developing a low cost, 85kW distributed wind turbine to compete on cost with distributed solar and utility-provided electricity. In the United States alone, there is sufficient distributed wind resource to meet 100% of the nation's electricity demand. This resource, however, has been largely untapped because the cost of distributed wind turbines has failed to keep pace with the declining costs of other electricity sources like distributed solar and utility-scale wind. We founded Pecos Wind Power in 2017 to develop a low cost distributed wind turbine to take advantage of the increasing trend toward a decentralized grid and a growing customer demand for on-site renewable electricity. Our founding team consists of three engineers with design and manufacturing backgrounds from some of the top utility-scale wind turbine manufacturers: Vestas, Siemens Wind Power, and Boulder Wind Power. While working in the utility-scale turbine industry, we witnessed a reduction in the cost of utility-scale turbines over 50% in 10 years. At Pecos Wind Power, we are applying the same design techniques to bring similar cost reductions to distributed wind turbines. We have completed the preliminary design of our turbine and expect a cost of energy 40% less than the best-selling distributed wind turbine in its class.

**Location:**

Greentown Labs - 444 Somerville Ave, Somerville, MA 02143

or

Work from Home

**Contact:**

Josh Groleau, Co-Founder & CEO, [josh@pecoswindpower.com](mailto:josh@pecoswindpower.com), 207-745-2231