

**Alexandra Thompson**

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**SUMMARY**

Mechanical Engineer with eight years of experience in the energy sector. Three years of experience in the design and pre-construction diligence of utility scale wind farms and over four years of experience in maintenance engineering and project management of process control and safety equipment.

**EXPERIENCE****Invenergy***June 2021 – Present**Senior Project Engineer*

Manage design of commercial and utility scale wind farms totaling over 3,500 MW of capacity.

- Lead design of turbine layout, access roads, and site electrical cabling.
- Manage pre-construction diligence including but not limited to geotechnical investigations, site hydrology studies, noise and shadow flicker assessments, and road-use optimization.
- Analyze on-site meteorological data and perform statistical regressions with long-term reference datasets to model long-term wind resource at projects.
- Build energy models to estimate annualized energy production and time-series production to inform project financial models and bids.
- Designed and supported successful county permit applications for projects totaling 1,000 MW of capacity.

**PBF Delaware City Refining Complex***January 2020 – May 2021**Project Engineer*

Implement and maintain process control and safety systems for the 190,000 barrel per day oil refining complex.

- Managed over \$2MM in projects to improve instrument and control infrastructure.
- Designed control infrastructure and managed project to enable remote operation of a process unit.
- Programmed flow rate simulator to design instrumentation required for a new safety shutdown system.
- Programmed control valve PID loops to optimize heat exchanger performance.

**Philadelphia Energy Solutions***June 2016 – August 2019**Instrument Reliability Engineer*

Provided instrument engineering support to Operations, Maintenance, and Technical Services departments for the 330,000 barrel per day oil refining complex.

- Implemented improvements to critical equipment safety systems regulated under the ISA 84 standard, without increasing maintenance requirements.
- Presented incident investigations, safety audit findings, and improvements to refinery management.
- Used Lean Six Sigma process to identify vulnerabilities and execute solutions to improve compliance with EPA Refinery Sector Rule flare regulations.
- Initiated and executed instrument and controls modernization projects valued up to \$400K.
- Upgraded analyzer communication equipment to improve data collection and reporting for local, state, and federal environmental regulations

**EDUCATION****Cornell University, College of Engineering***2012 – 2016**B.S. Mechanical Engineering***UNIVERSITY PROJECTS & RECOGNITIONS****Wind Power Science, Engineering and Policy Graduate Coursework***University of Delaware, 2020-2021*

Courses in the Graduate Certificate program included Wind Power Meteorology, Geological Aspects of Offshore Wind, and International Perspectives on Energy and Environment

**Passive Acoustic Detection of Bird Strikes on Wind Turbine Blades***Cornell University, 2016*

Project to evaluate feasibility of using acoustic monitoring to identify and quantify bird fatalities. The project was awarded the Bart Conta Prize in Energy and the Environment from Cornell University.

**Optimization of a Small Scale Wind Turbine Blade***Cornell University, 2015*

Project to design and optimize a 9-inch wind turbine blade. Wrote Matlab code using Blade Element Theory to maximize power coefficient,  $C_p$ .