EE / CprE / SE 491 – sdmay18-42

Group 42: "Power Systems Analysis in an Induction Type Wind Turbine"

February 04 – February 17

Client:

Ron Zickefoose

Faculty Advisors:

James McCalley and Nick David

Team Members:

Ben Zickefoose – Team Lead/Chief Engineer

Melissa Flood – Power Engineer/Meeting Facilitator

Tate Stottmann – Power Engineer/Test Engineer

Matt Miner – Power and Controls Engineer/Meeting Scribe

David Clark – Controls and Embedded Engineer/Report Manager

Bi-Weekly Summary

Consulting with Nick David. Designing and building test jig for induction motor. Working with past wind data to compile history. Working with AutoCAD. Modeled for ideal wind turbine inside EDA. Working with integrating the anemometer.

Past Accomplishments

Continued research. Group work on the class presentation. Shopping for necessary materials for engine turbine testing. Continued research and design on the control system. Team members worked with ASMG software to simulate turbine motor. Building and working with the Arduino and the X-Bee. Building Eagle CAD libraries.

Pending Issues

No pending issues currently.

Individual Contributions

Team Member	Contribution	Hours	Total Hours
Ben Zickefoose	Team meetings. Consulting with Nick David about sizing the sprocket gears for the generator test. Searching and purchasing equipment. Taking measurements for compiling list, shopping for, and delivering parts for the motor mounts and gear cage. Class presentation.	9	27
Melissa Flood	Worked on past wind data management. Team meetings. Worked on document for others as a 'How to' document of building their own wind turbine on a property. Worked on	9	22

	reforming a blueprint from a paper copy onto AutoCAD while simultaneously learning how to use AutoCAD. Class presentation.		
Tate Stottmann	Team meetings. Worked on presentation. Worked on single phase generator design. Modeled for ideal wind turbine inside EDA.	6	19
Matt Miner	Team meetings. Getting frequency from anemometer and converting it to wind speed, done with the Arduino. Spent time working with the X-Bee RF transmitters. Had to get a program to set the X-Bee's on a computer. Had to troubleshoot connecting to the X-Bee. Class presentation.	8	20
David Clark	Team meetings. Developing schematic and board layout for microcontroller. Class presentation. Hospitalized.	4	18

Comments and Extended Discussion

None currently.

Plan for Coming Week

Continue researching individual areas: Ben – wind turbine physical design and testing; Melissa – wind data; Matt – wind data and microcontroller; Tate – tail boom system; David - microcontroller. Continuing researching REC documentation, extremely long document. Working towards finalizing circuit design and layout. Finalizing turbine engine testing and building safety container. Hoping to test the induction motor soon.

Summary of Advisor Meeting

Working on setting up meeting with Professor McCalley.