

EE / CprE / SE 491 – sdmay18

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

October 15 – 21

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

Weekly Summary

Continued to research individual assigned areas. Trying to push forward with CAD class with Lee Harker. Working with multiple simulation software, both Simulink and Eagle.

Past Week Accomplishments

Continued to research individual assigned areas. Meeting with both Professor McCalley and with Nick David, at separate times. Made progression with microcontroller system. Made progression with our team objective.

Pending Issues

Scheduling a time to speak with Rural Electric Co-op engineers to discuss putting a wind turbine system onto the main grid. Multiple attempts made. Still trying to make contact.

Individual Contributions

Team Member	Contribution	Hours	Total Hours
Ben Zickefoose	Researched into getting gears that would be used to hook motors together for testing and experimentation. Meeting with IEEE officers about an IEEE Lab Jam related to writing blueprints.	4.5	49
Melissa Flood	Received and uploaded documents pertaining to interconnection agreements from Alliant energy onto the Google drive. Worked on Simulink model. Plugged in motor parameters into a base induction model into Simulink and got a decreasing power output right away. Tried to stabilize	5	29.5

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	the power output. Downloaded wind data from NOAA, had to resubmit the request. Tried and failed to download a 6700 pages PDF into an Excel, or Word doc; or anything but a PDF.		
Tate Stottmann	Research into using AutoCAD Electric and alternatives available. How to set up layouts and run simulations. Real world testing of wind vein module with power supply. Testing of motor for wind vein integration with module. False signals used by various power supplies, and output to motor analyzed with oscilloscope.	4.5	32.5
Matt Miner	Worked on Matlab simulation having trouble getting our values to work for examples we found. Looking at how to use Arduino Uno.	4	28
David Clark	Circuit design for the microcontroller. Design layout for the circuit system. Building circuit design for new microcontroller, planning on using ATmega328 microcontroller.	4	32

Comments and Extended Discussion

None currently.

Plan for Coming Week

Continue researching individual areas. Meeting as a group to discuss current layout of wind turbine. Planned discussion about REC documentation.

Summary of Advisor Meeting

No advisor meeting.