EE / CprE / SE 491 – sdmay18

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

October 08 – 14

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. Meeting with both Professor McCalley and with Nick David, at separate times. Made progression with microcontroller system. Made progression with our team objective.

Past Week Accomplishments

Continued researching individually assigned areas. Meeting with Bob Zickefoose.

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	Meeting with team and Professor McCalley: He advised to be careful in how we word our objectives to be sure that our grades were not dependent on REC approval. He also advised in making sure that all the work that we do was actually focused on the main objectives at hand and that they would actually be working towards them and not just useless busywork. Meeting with me and Nick David - we discussed different equations and circuit analysis that could be shown to the REC to prove the safety of our system and different ways to connect the motors for analysis.	3	44.5

Melissa Flood	Worked on Simulink to create a model of the induction motor -Figured out different parameters of the model to use and found output curves for the induction motor for rated torque, power factor. Worked on documentation.	11	24.5
Tate Stottmann	Inspection of Wind Vein Module layout. Layout drafting and cleanup of wind vein module. Research into different 220 VAC relay that could be used in place of omeron. Team meeting to discuss wind vein module integration with main module.	5.5	28
Matt Miner	Was learning about the XBee RF modules. I learned watched a video on how to use them to with Arduino. As well as looked over the p Basic code that was given to use and trying to see how it works. Research on REC. found some form that need to be filled out and discussion on the process. Got the wrong information at first but think I found the right information. The form will help find what will be need for REC. Looked at Matlab to try simulation of induction generator did not go well found specs for motor and some similar examples. Need to figure out how to work are model in. Meet with Dave and looked over control layout and decided to go with Arduino and change the controller so we understand it better. Mapped out the current controller.	7	22
David Clark	Meeting with Academic advisor. Professor McCalley. Meeting with Lee Harker discussing CAD class. Lee and I went through a basic layout to ensure that the lab was suitable for the needs of the CAD class.	3	29

Comments and Extended Discussion

None currently.

Plan for Coming Week

Continue researching individual areas. Meeting with Nick David scheduled.

Summary of Advisor Meeting

Scheduled meeting with Nick David. Discussion about documentation and how to improve on them. Discussion with Professor McCalley. The discussion entailed the direction of our projection objective. Currently our object involves the approval of REC. Our new object no long has this requirement. What we do not want is to perform all of the work and then at the end have REC tell us no. Previously our objective was to get a working wind turbine onto the main grid. Now our objective is to work with Rural Electric Co-op on a requirements document and then design a wind turbine around those requirements.