
EE 492 Bi-Weekly Report

January 25 - February 7

SDMAY21-46

Microgrids to Support Communication Infrastructure

Client/Advisor: Dr. Anne Kimber

Team Members: Dylan Miley, Liam McAlister, Ryley Radack, Abdelrahman Mannan, Hoang Dang

Weekly Summary

This past time period, we worked on creating simulations of the individual components of our microgrid, as well as worked on the design for the microgrid prototype.

Past Week Accomplishments

- Toured Dr. Whenzen Li's lab in preparation for testing a hydrogen fuel cell stack.
- Ordered the components to be used in building/testing the prototype (Fuel cell, solar panels, etc.)
- Created one-line diagrams of the simulation and prototype.

Pending Issues

- The hydrogen fuel cell stack is expected to take 6-8 weeks to arrive. Any delay would be detrimental to our ability to test it. If we are unable to test the fuel cell stack, we will test a single fuel cell and extrapolate data from it.

Individual Contributions

Team Member	Individual Contributions	Hours This Time Period	Cumulative Hours
Liam McAlister	- Built 'bare-bones' inverter simulation - Read IEEE documents on inverter controls.	~12	~12
Dylan Miley	- development of 18 kw hydrogen system - Preliminary HOMER simulation	~12	~12
Hoang Dang	- Continue building battery simulation system -	~12	~12
Abdelrahman Mannan	-Built a semi-functional solar pv simulink model	~12	~12

Ryley Radack	Continued developing simulation for wind subsystem	~12	~12
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Plans for the Upcoming Week

- Liam - Complete inverter simulation
- Dylan - Complete hydrogen system simulation
- Hoang - Complete battery simulation
- Ryley - Complete wind simulation
- Abdel - Complete solar simulation
- Entire team - Combine all individual simulations.

Summary of Weekly Advisor Meeting

- Discussed wind and solar data, resources to obtain it, and the best ways to use it in a simulation.
- Discussed performing some tests in Dr. Li's lab before the fuel cell stack arrives, in order to familiarize ourselves with the lab equipment.