
EE 492 Bi-Weekly Report

February 8 - February 21

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 combining our individual simulations together.

Past Week Accomplishments

- Combined Battery Model with PV array Model
- Combined Wind Turbines with Grid following Inverter
- Combined Hydrogen fuel cells with Grid following Inverter

Pending Issues

- There are integration issues to be worked through. Individual simulations work well on their own, but when combined problems such as unstable voltages arise.
- Controls and filters need to be refined between components.

Individual Contributions

Team Member	Individual Contributions	Hours This Time Period	Cumulative Hours
Liam McAlister	- Worked on combining inverter models with wind, PV, and hydrogen models.	~20	~32
Dylan Miley	- combine inverter with hydrogen system - optimize hydrogen system	~24	~36
Hoang Dang	- Finished Grid forming Inverter for Battery model - Combined Battery Model with PV array	~20	~32
Abdelrahman Mannan	-Worked on integrating PV system with Battery and inverter	~20	~32

Ryley Radack	- Finished modeling Wind subsystem - Started integration with Inverter and inverter control	~24	~36
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Plans for the Upcoming Week

- Liam - Continue integration troubleshooting
- Dylan - Complete integration of hydrogen inverter
 - start integration of hydrogen+inverter with the rest of microgrid
- Hoang - Refining Grid forming Inverter's filter.
 - Work on combining Battery model with PV array and grid following inverter
- Ryley - Refine controls for Wind subsystem inverter integration
- Abdel - Complete solar simulation/integrate PV array/ battery system with rest of the system
- Entire team - Refine combined models.
 - Integrate to one final simulation
 - Inspect battery and solar panels for the nanogrid

Summary of Weekly Advisor Meeting

- Discussed simulation results, possible sources of error, possible solutions.
- Discussed future plans for integration + establish dates for completing integration.