
EE 491 Weekly Report 4

2/13/18 – 2/20/18

Group 11

High-Level Design of a Distribution Microgrid

Client: Alliant Energy

Advisor: James McCalley

Nick Stitzell – Communications Engineer

Minoru Fernando – Research Engineer

Joe Thurin – Power Engineer

Taylor Murphy – Power Engineer

Remo Panella – Data Engineer

Project Objective:

Create an excel document that estimates the cost of incorporating distributive generation and storage into a microgrid system at Nichols, IA.

Weekly Summary:

This week we continued to develop our first prototype spreadsheet to estimate the conditions of the system and the corresponding response of the system. We did not meet with our client so as to continue improving the design.

Past Week Accomplishments:

Last week we began our prototype for the spreadsheet we will be using to display our microgrid design of Nichols, IA. This spreadsheet will highlight the cost and quantity of solar panels and batteries.

Pending Issues:

The only issue we encountered this week is a small number of data points. Because our current demand curve is only based on one day, we don't have a confident way to extrapolate this information to a 30 day demand. We hope to receive more specific information down to the hourly demand.

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Nick Stitzell	Finalized Project Plan, updated website, assisted with prototype	4	14.5
Minoru Fernando	Assisted with research on solar radiation and the implementation of a simulation	4	7
Joe Thurin	Continued research and analyzing of PV panels, intervers and batteries, began simulation for design of microgrid	6	10
Taylor Murphy	Researched microturbines, began supplemental generation calculations, calculated for the quantity of solar panels required to meet the demand	5	9
Remo Panella	Began implementing a simulation to assist with the design of the microgrid	5	8.5

Plans for the Coming Week (2/13/18 – 2/20/18):

- Nick
 - Begin compiling the Design Document
- Remo
 - Create a prototype spreadsheet to pitch to client
- Joe
 - Assist with designing the combinations of solar and battery needed to meet the kWh demand
- Taylor
 - Assist with designing the combinations of solar and battery needed to meet the kWh demand
- Minoru
 - Find out how to upload documents to the website
- Alliant Energy
 -

Summary of Client Meeting (2/20/18):

No meeting this week