
EE/CprE/SE 491 WEEKLY REPORT 2

10/7/2019-10/13/2019

Group number: 57

Project title: Impact of High Photo-Voltaic Penetration on Distribution Systems

Client &/Advisor: Dr. Venkataramana Ajjarapu

Team Members/Role: Daniel Riley – Team Leader

Andrew Chaney – Project Engineer

Kenneth Prell – Assistant Project Engineer/Editor

Thomas Coleman – Assistant Project Engineer/Document Architect

Weekly Summary

In this session, we have made progress on the following tasks: Continued progress on finishing the NDA form with Alliant Energy, incorporated and solved the example with regulator, modeled example in MATLAB, began learning about OpenDSS in preparation for more complex examples.

Past week accomplishments

- Nondisclosure Agreement – Daniel
 - Worked with Dr. Ajjarapu to obtain Alliant Energy contact for NDA signature.
- Textbook Example – All Team Members
 - After completing the handwritten solution to the example, we incorporated the voltage regulator in our solution.
- MATLAB Implementation – Andrew
 - The voltage regulator was included in the MATLAB implementation. The results were in-line with the textbook answers.
- OpenDSS Familiarization – All Team Members
 - Read background information on the program OpenDSS in preparation for transferring the example over.

Pending issues

- NDA Submission – All Team Members
 - Need resolution on whether Alliant Energy's signature is required on the NDA.
- OpenDSS Familiarization– All Team Members

- Little documentation is present for beginners in OpenDSS. We have spoken with our advisor about this and he recommends attending lectures given by Dr. Wang pertaining to OpenDSS.

Individual contributions

<u>Name</u>	<u>Individual Contributions</u>	<u>Hours this Session</u>	<u>Hours cumulative</u>
Daniel	NDA Progress, Design Document, OpenDSS	7.5	16.5
Andrew	MATLAB Coding, OpenDSS	10	21
Kenneth	Design Document, MATLAB Coding, OpenDSS	9	18
Thomas	Design Document, OpenDSS, Weekly Reports	7.5	16.5

Plans for the upcoming week

- OpenDSS Familiarization – All Team Members
 - Continue to learn by doing with OpenDSS until lecture dates of October 22 and 24.
- NDA Progression – Daniel
 - Obtain Alliant Energy contact from Dr. Ajjarapu.

Summary of weekly advisor meeting

- Talk to Dr. Wang about attending lectures
- Ensure absolute knowledge over four-node example before moving onto 34-node
- Look into taking EE 455 next semester
- For example:
 - Understand that interruption in real-world loses money for companies
- Concerning solar power:
 - Large scale integration of solar power
 - Local community funded
 - No consumer maintenance
 - Depends on solar panel location
 - Can provide transmission regulation to reduce reliance on regulators
 - Power factor control
- Finish NDA
- Familiarize with OpenDSS
- Look at 34-node example
- Look at Alliant model