
EE/CprE/SE 491 WEEKLY REPORT 4

10/21/2019-10/27/2019

Group number: 57

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

Client &/Advisor: Dr. Venkataramana Ajjrapu

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: Attended lectures pertaining to OpenDSS, continued work on OpenDSS 4-node model.

Past week accomplishments

- Nondisclosure Agreement – Daniel
 - Worked with Dr. Ajjrapu to obtain Alliant Energy contact for NDA signature.
- 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
 - become more familiar with how to input data in to OpenDSS so that we can simulate the textbook 4-node model.

Individual contributions

| <u>Name</u> | <u>Individual Contributions</u> | <u>Hours this Session</u> | <u>Hours cumulative</u> |
|-------------|---|---------------------------|-------------------------|
| Daniel | NDA Progress, Attended EE 653 lectures, OpenDSS | 7 | 33.5 |
| Andrew | OpenDSS | 5 | 35.5 |
| Kenneth | OpenDSS | 4.5 | 32 |
| Thomas | Attended EE 653 lectures, OpenDSS, Weekly Reports | 8 | 35 |

Plans for the upcoming week

- Finish OpenDSS 4-node model – All Team Members
 - Finish OpenDSS 4-node model.
- NDA Progression – Daniel
 - Obtain Alliant Energy contact from Dr. Ajjarapu.

Summary of weekly advisor meeting

- 653 lecture starts
 - T/R 1100-1220
 - Sweeny 1116
 - Some examples will be given
- Definition problems in OpenDSS
- Need more work to understand parameters
- 4 bus ---> 34 ---> Model for real world
- Example (hundreds of nodes +)
- No news on NDA from Derrick
- Rural feeder has more problems with voltage due to longer lines and more loss
- Wind farms are mostly at transmission grid levels, rather than distribution
- Alok will send link
 - How many regulators, PV, wind, etc.
 - Look at caps VS regulators VS PV
 - How to formulate function for optimization
- CVX works on MATLAB Base