***EE/CprE/SE 491 WEEKLY REPORT 5***

***10/28/2019-11/17/2019***

***Group number: 57***

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

***Client &/Advisor: Dr. Venkataramana Ajjarapu***

***Team Members/Role: Kenneth Prell – Team Leader***

***Andrew Chaney – Project Engineer***

***Daniel RIley – Assistant Project Engineer/Editor***

***Thomas Coleman – Assistant Project Engineer/Document Architect***

**Weekly Summary**

During this week we finished the 34-bus simulation, started experimenting with PV injection into larger systems,

**Past week accomplishments**

- Attended OpenDSS lectures EE 653 – Daniel & Thomas
- Finished 34-bus simulation – Andrew & Daniel
- Started process of simulating the 8400-node system by writing programs in MATLab - Andrew, Thomas, Kenneth, & Daniel

**Pending issues**

- Give preliminary presentation to Dr. Ajjarapu and Alok
- Simulate 8400-node system and inject PV into the system to test different types of control methods and distribution types
- Get network from Alliant Energy and start work on simulation and design

**Individual contributions**

| Name | Individual Contributions | Hours this Session | Hours cumulative |
|---|---|---|---|
| Daniel | NDA Progress, Attended EE 653 lectures, OpenDSS | 20 | 53.5 |
| Andrew | OpenDSS | 22.5 | 58 |
| Kenneth | OpenDSS | 24 | 56 |
| Thomas | Attended EE 653 lectures, OpenDSS, Weekly Reports | 16 | 51 |

**Plans for the upcoming week**

- Give preliminary presentation to Dr. Ajjarapu and Alok

**Summary of weekly advisor meeting**

- Obtain 653 presentation pertaining to OpenDSS
- Fix OpenDSS matrix concerning line characteristics
- Alok sent links via email containing more high bus examples
- Continue to familiarize OpenDSS, finish example
- Prepare presentation 3 weeks from now documenting progress thus far
    - Monday, Nov 18
- For 491 committee, look at rubric for presentation guidelines
    - For Nov 18, go through rubrics and form presentation around
    - This presentation serves as a preparation for 491 committee
- Look at chapters from book to understand difference between capacitor and voltage regulator and why both are needed (do in parallel in OpenDSS)
- More lectures about OpenDSS tomorrow
- Finished 4 node example
- Check 4 node impedances
    - Once doing 34, can't really test
    - Add regulator to get 0.99 p.u.
- Design is more than solving the problem
- Who is doing what?

        - Info needed for evaluation criteria
- Assign tasks for presentation
- Check lower triangular matrix
    - Impedance input method
- By end of Semester
    - Add DER – 34 node
    - Synthetic system without DER
    - Optimization basics (CVS-MATLab)
- Presentation rubric
- Book Conference room for presentation day