EE 492 Weekly Report 4   9/18/16

Group number: DEC1614
Project Title: Impact of High Photo-Voltaic Penetration on Distribution Systems
Client & Advisor: Iowa State University & Alliant Energy & Venkataramana Ajjarapu
Team Members/Role:
            Logan Heinen /Team Leader
            Difeng Liu/Team Webmaster
            Zhengyu Wang /Team Communication Leader
            Redouane Zaou /Key Concept Holders

Weekly Summary

Since we have hold information from our client for about two weeks, we are finally able to start monitoring at different nodes for collecting voltages and relating data. Except for voltages, we also focused on the taps changes of regulators and transformers. Additionally, we found that some settings in the OpenDSS file from client are different from the description we had from. So, we followed the description and revised the code with new settings.

Past week accomplishments

1. Comparing the OpenDSS file from client;
2. Correcting code with data from description;
3. Collecting voltages, tap change, load profiles;
4. Two group meetings;
5. Concluding suggestions from Dr. Ajjarapu and course instructor;
6. Collecting ideas for final presentation.

Pending issues

❖ Schedule a time for field trip to Washington area;
❖ Research more about the system with different load and 24-hours loadshapes;
❖ Research the one year long load file from client;
❖ Research more about the selected nodes from client.

Individual Contributions

NAME	Individual Contributions	Hours this week	HOURS cumulative
Logan Heinen	Meeting with advisor, Group meeting, Communication with Ph.D. student, Ankit, Database research and analysis;	4	12
Difeng Liu	Updating website, Meeting with advisor, Group meeting, Database research;	3	10
Zhengyu Wang	Meeting with advisor, Group meeting, Database research, Weekly report;	3	11
Redouane Zaou	Meeting with advisor, Group meeting, Database walkthrough.	3	10

Comments and Extended Discussion

Based on the research of the new OpenDSS file and feeder data, we discovered the distribution system of Washington area in detail in many different factors. With different load shapes, we tested the limit of the system and see what load level could cause system problem, which will help us to know the capability of the system and safe range of loading. Next week, we should start with more data exporting and analysis.

Plan for Coming Week

From the feedback of this week, the plan for the coming week will be more data exporting and analysis. To increase the efficiency, we shall divide the task to four pieces for every team member. Besides, we will need more supporting materials for conclude the effects of different load shape and peak load.

Summary of Weekly Advisor Meeting

After listening to our weekly report, Dr. Ajjarapu was satisfied with our plan for the rest semester. Besides, he showed more interests on different load shapes, peak loads, and effects under different condition. And he told us to improve the current conclusion of effects of different load conditions on the simulation. Lastly, he suggested us to start learning about the solar PV study and how to add solar PV to the simulation in OpenDSS.