EE 492 Weekly Report 10

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

   Based on the work on the new system during the past week, we found out that the new system does not work perfectly because we still have some missing nodes. To compile the new system in OpenDSS, we also detected a lot of errors in the line code and the command code, and some of the errors just happened in this system. We were confused by the new system and then concluded all the errors and reasons that might cause these errors.

Past week accomplishments

1. Run the new system in OpenDSS
2. Debugging the new system
3. Concluding errors and reasons
4. Report our researching and existing confusions

Pending issues

- ❖ Make it clear why system is not complete
- ❖ List questions we have now and try to organize
- ❖ Combine the old system to the new system and see if they can work better
- ❖ Add solar PV system to the OpenDSS file

Individual Contributions

NAME	Individual Contributions	Hours this week	HOURS cumulative
Logan Heinen	Meeting with advisor, Individual OpenDSS study, Database research and analysis;	4	37

Difeng Liu	Meeting with advisor, Database research;	3	31
Zhengyu Wang	Meeting with advisor, Database research, Weekly report;	3	34
Redouane Zaou	Meeting with advisor, Database analysis.	3	30

Comments and Extended Discussion

During this week, we still cannot match up the data to given data from client because of the system is not completely the same as the SynerGEE system from client. And we find more nodes, capacitors, missing regulators happened in the new system, which also bring a lot of confusions to us during the period of researching. We have already emailed our client to make sure that missing nodes on the map do not really affect the results of output, and how we could modify the system so that we could build the most similar system for future study. Lastly, we found OpenDSS file may have a memory limit for typing and input. Because our client is using SynerGEE, the transition to OpenDSS file could not be 100% covered due to small memory limit size.

Plan for Coming Week

We heard from client in this week, and he mentioned some points that we did not notice, and he suggested us to work on the combined system and explore more about selected nodes, especially those nodes can be located on the map. By combining two systems, we are now having a system with more load, more capacitors, same voltage regulator. And we will research the combined system, and build it as our test system. Then we will add the solar PV system to some places of interests so that we can test how much solar PV this system can handle.

Summary of Weekly Advisor Meeting

We reported our research results, output data, plots, and our prediction of reasons why system cannot work out to Prof. Ajjarapu. He understood the system was incompletely generated from SynerGEE and the system is never complete. However, he suggested us to complete the system by combining the old and new systems and try to compile and match the data.