

## **EE 492 Weekly Report 5**

**9/25/16**

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

### **Weekly Summary**

In this week, we had some process on the conclusion of effects of different load conditions. About the selected nodes from client, we have located all the node by searching coordinates. During the period time of searching for selected node, we notice that there are two nodes cannot be found on the map that we plotted from OpenDSS. On the other hand, we monitored another 10 nodes in different areas on different days so that we can have a better idea how load and power curve match each other.

### **Past week accomplishments**

1. Group meetings for solving problems and study;
2. Finished a new conclusion of effects of different load conditions on the system;
3. The one year long load file was reorganized and analyzed;
4. Finished searching for client selected nodes on the circuit;
5. Prepared to insert monitors to export data;
6. Selected 10 nodes for researching system and area power demands.

### **Pending issues**

- ❖ Need assistance with missing nodes from client's selections;
- ❖ Inserting monitors to selected nodes to export voltage profiles;
- ❖ More researches of load shapes in different seasons in Washington areas;
- ❖ More researches of circuit organization.

## **Individual Contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Logan Heinen	Meeting with advisor, Group meeting, Communication with Ph.D. student, Ankit, Database research and analysis;	4	16
Difeng Liu	Updating website, Meeting with advisor, Group meeting, Database research;	4	14
Zhengyu Wang	Meeting with advisor, Group meeting, Database research, Weekly report;	4	15
Redouane Zaou	Meeting with advisor, Group meeting, Database walkthrough.	4	14

## **Comments and Extended Discussion**

Conclusion of effects under different load conditions on the system seems to be more complete and advanced. We discovered more about the limit of the system. On the other hand, the research speed needs to be higher so that we can ensure project can be finished in time.

## **Plan for Coming Week**

For the coming week, we plan to research more about selected nodes and output data. Our problem with current results is that they can hardly match to the given information from client. It will make no sense if the simulation can match the real-world data. In short, the main idea for next week is similar with this week's tasks.

## **Summary of Weekly Advisor Meeting**

From the meeting with Dr. Ajarapu, we noticed that our base OpenDSS file may have different settings from client's default. With these possible differences, we will have to double check the base OpenDSS file and debug for the differences so that the new output could perform better.