
EE 491 WEEKLY REPORT 9

Date: 11/1/16-11/7/16

Group number: May1728

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

Client &/Advisor: Alliant Energy/ Dr. Ajarapu

Team Members/Role:, Nat Summitt/Team Leader, Sam Searls/Team Webmaster, Wyatt Lauer/Communications, Mark Szkodyn and Abdul Waasay Mirza/New Developments

- **Weekly Summary (Short summary about what you did this week)**
- Our tasks for last week are the same as the week before and they were to finish the design document and add solar PV to two or three different areas on our test system. We decided to analyze two months, June and December. We will be adding regulator taps to the voltage load profiles to analyze the effect of regulators on the system. During our meeting two weeks ago with Dr. Ajarapu, and the TA, the following items were discussed:
 1. We presented the load profiles from 5 different months and discussed how the loads vary according to the season with the addition of capacitors and regulators.
 2. We discovered that December had the highest peak and June had a highest standard deviation.
 3. We discussed the task for upcoming week, which were to add solar PV to each load and analyze total peak solar / entire feeder peak load.
- **Past week accomplishments (please describe as what was done, by whom, when)**
 - Nat Summitt: Researched and worked on the addition of solar PV to the loads and addition of regulators tap to the voltage load profiles. Read the OpenDSS PVSystem Element Model.
 - Wyatt Lauer: Read the OpenDSS PVSystem Element Model. Finished sections 6&7 for the Design Document. Met with the group to discuss the solar PV addition.
 - Sam Searls: Read the OpenDSS PVSystem Element Model. Finished sections 1&2 on the design document. Figured out the problem with viewing the website and fixed it.
 - Mark Szkodyn: Read the OpenDSS PVSystem Element Model. Worked on the addition of Solar PV to the loads. Finished sections 3&4 on the Design Document.

- Abdul Wassay Mirza: Read the OpenDSS PVSystem Element Model. Worked on the weekly log report and section 5 of the design document. Researched on regulator tap effect on the voltage load profile.
- **Pending issues (if applicable)**
 - None at this time
- **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Nat Summitt	Solar PV addition on OpenDSS, Regulator taps addition to load profiles, representing the data from load shapes	4	41
Wyatt Lauer	Researched on solar PV addition, sections 6&7 of design document, Regulator tap addition	4	32
Sam Searls	Continued working on the website, Researched on solar PV addition, and sections 1&2 of design document	4	32
Mark Szkodyn	Researched on solar PV addition, sections 3&4 of design document, Regulator tap addition	4	32
Abdul Waasay Mirza	Researched on solar PV addition, section 7 of design document, Regulator tap addition in OpenDSS	4	32

- **Comments and extended discussion**
- **Plan for coming week (please describe as what, who, when)**
 - Nat Summitt: Meeting, and presenting to Dr. Ajjarapu our plots with regulators taps and explaining how it is affecting the loads in December and June. Will keep working on addition of solar PV to the system. Work on next task after our meeting.

- Wyatt Lauer: Meeting, and presenting to Dr. Ajarapu our plots with regulators taps and explaining how it is affecting the loads in December and June. Will keep working on addition of solar PV to the system. Finish Design document. Work on next task after our meeting on Wednesday.
 - Sam Searls: Meeting, and presenting to Dr. Ajarapu our plots with regulators taps and explaining how it is affecting the loads in December and June. Will keep working on addition of solar PV to the system. Finish Design document and continue updating the website. Work on next task after our meeting on Wednesday.
 - Mark Szkodyn: Meeting, and presenting to Dr. Ajarapu our plots with regulators taps and explaining how it is affecting the loads in December and June. Will keep working on addition of solar PV to the system. Finish Design document. Work on next task after our meeting on Wednesday.
 - Abdul Wassay Mirza: Meeting, and presenting to Dr. Ajarapu our plots with regulators taps and explaining how it is affecting the loads in December and June. Will keep working on addition of solar PV to the system. Finish Design document. Work on next task after our meeting on Wednesday.
- **Summary of weekly advisor meeting (if applicable/optional)**
No meeting this week.