
EE 491 WEEKLY REPORT 10

Date: 11/8/16-11/14/16

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 this last week were to finish the second version of the project plan and add solar PV to ten different locations, two per person, on our test system to figure out losses, violations, and tap position changes for 20, 40, 60, 80, and 100 percent penetration for each location. We decided to analyze two months, June and December. During our meeting last week with Dr. Ajarapu, and the TA, the following items were discussed:
 1. We presented the tap position changes over 24 hours for the June and December load profiles, and we also presented the effects of solar addition at three locations for 20, 50, and 80 percent penetration.
 2. We discussed the task for upcoming week, which were to add solar PV to ten locations, two per person, and analyze losses, tap position changes, and violations.
- **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. Compiled the CSV's to prepare for the presentation to give this week
 - Wyatt Lauer: Updated the project plan for the second version. Met with the group to discuss the solar PV addition. Ran simulations for 20, 40, 60, 80, and 100 percent for two locations.
 - Sam Searls: Updated the website. Worked on updating the project plan. Ran simulations for 20, 40, 60, 80, and 100 percent for two locations.
 - Mark Szkodyn: Worked on updating the project plan. Ran simulations for 20, 40, 60, 80, and 100 percent for two locations.

- Abdul Wassay Mirza: Worked on updating the project plan. Ran simulations for 20, 40, 60, 80, and 100 percent for two locations.

○ **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, compiled the data from the simulations to prepare the presentation	6	47
Wyatt Lauer	Researched on solar PV addition, ran simulations for two locations at 5 different penetrations	7	39
Sam Searls	Continued working on the website, Researched on solar PV addition, ran simulations for two locations at 5 different penetrations	7	39
Mark Szkodyn	Researched on solar PV addition, ran simulations for two locations at 5 different penetrations	7	39
Abdul Waasay Mirza	Researched on solar PV addition, ran simulations for two locations at 5 different penetrations	7	39

○ **Comments and extended discussion**

○ **Plan for coming week (please describe as what, who, when)**

- Nat Summitt: Meeting, and presenting to Dr. Ajarapu our plots with losses, tap changes, and violations for the different solar penetrations in December and June. Work on next task after our meeting.

- Wyatt Lauer: Meeting, and presenting to Dr. Ajarapu our plots with losses, tap changes, and violations for the different solar penetrations in December and June. Work on next task after our meeting. Finish second version of project plan. Work on next task after our meeting on Wednesday.
 - Sam Searls: Meeting, and presenting to Dr. Ajarapu our plots with losses, tap changes, and violations for the different solar penetrations in December and June. Work on next task after our meeting. Finish second version of project plan. Work on next task after our meeting on Wednesday. Continue working on website.
 - Mark Szkodyn: Meeting, and presenting to Dr. Ajarapu our plots with losses, tap changes, and violations for the different solar penetrations in December and June. Work on next task after our meeting. Finish second version of project plan. Work on next task after our meeting on Wednesday.
 - Abdul Wassay Mirza: Meeting, and presenting to Dr. Ajarapu our plots with losses, tap changes, and violations for the different solar penetrations in December and June. Work on next task after our meeting. Finish second version of project plan. Work on next task after our meeting on Wednesday.
- **Summary of weekly advisor meeting (if applicable/optional)**
- We accomplished the following at the meeting:
- Presented the tap position changes over 24 hours for the June and December load profiles, and we also presented the effects of solar addition at three locations for 20, 50, and 80 percent penetration
 - Discussed the task for upcoming week, which were to add solar PV to ten locations, two per person, and analyze losses, tap position changes, and violations