EE 491 WEEKLY REPORT 11 ***Date: 11/15/16-11/27/16***

Group number: May1728

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

Client &/Advisor: Alliant Energy/ Dr. Ajjarapu

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 two weeks were to start on the final presentation and observe the effect of solar residential by adding solar to each bus with load. We decided to analyze two months, June and December. During our meeting two weeks ago with Dr. Ajjarapu, and the TA, the following items were discussed:
  1. We presented the losses, tap changes, and voltage violations for 20, 40, 60, 80 and 100 percent penetration, as well as presenting the impact of location of the solar penetration on the losses, tap changes, and voltage violations.
  2. We discussed the task for upcoming week, which were to add solar PV to every node with load to observe the impact of residential solar power, the percentage change in losses, and the effect of solar generation at large loads.
- **Past week accomplishments (please describe as what was done, by whom, when)**
  - Nat Summitt: Ran simulations for 20, 40, 60, 80, and 100 percent for residential solar and solar generation at large loads. Compiled the CSV's to prepare for the presentation to give this week
  - Wyatt Lauer: Ran simulations for 20, 40, 60, 80, and 100 percent for residential solar. Worked on final presentations.
  - Sam Searls: Updated the website. Ran simulations for 20, 40, 60, 80, and 100 percent for residential solar. Worked on final presentations.
  - Mark Szkodyn: Ran simulations for 20, 40, 60, 80, and 100 percent for residential solar. Worked on final presentations.

- Abdul Wassay Mirza: Ran simulations for 20, 40, 60, 80, and 100 percent for residential solar. Worked on final presentations.

- **Pending issues (if applicable)**
  - None at this time
- **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Nat Summitt	Residential solar addition in OpenDSS, solar addition at large loads, compiled the data from the simulations to prepare the presentation	11	58
Wyatt Lauer	Ran simulations for residential solar, made plots for this week's presentation, worked on final presentation	12	51
Sam Searls	Continued working on the website, ran simulations for residential solar, made plots for this week's presentation	12	51
Mark Szkodyn	Ran simulations for residential solar, made plots for this week's presentation, worked on final presentation	12	51
Abdul Waasay Mirza	Ran simulations for residential solar, made plots for this week's presentation, worked on final presentation	12	51

- **Comments and extended discussion**

- **Plan for coming week (please describe as what, who, when)**
  - Nat Summitt: Meeting and presenting to Dr. Ajjarapu our findings on residential solar power, the effects of solar generation at large loads, and the percentage changes of losses. Get feedback on final presentation from Dr. Ajjarapu. Finish the final presentation for Monday, December 5 at 10 am.

- Wyatt Lauer: Meeting and presenting to Dr. Ajjarapu our findings on residential solar power, the effects of solar generation at large loads, and the percentage changes of losses. Get feedback on final presentation from Dr. Ajjarapu. Finish the final presentation for Monday, December 5 at 10 am.
- Sam Searls: Meeting and presenting to Dr. Ajjarapu our findings on residential solar power, the effects of solar generation at large loads, and the percentage changes of losses. Get feedback on final presentation from Dr. Ajjarapu. Finish the final presentation for Monday, December 5 at 10 am. Continue updating the website.
- Mark Szkodyn: Meeting and presenting to Dr. Ajjarapu our findings on residential solar power, the effects of solar generation at large loads, and the percentage changes of losses. Get feedback on final presentation from Dr. Ajjarapu. Finish the final presentation for Monday, December 5 at 10 am.
- Abdul Wassay Mirza: Meeting and presenting to Dr. Ajjarapu our findings on residential solar power, the effects of solar generation at large loads, and the percentage changes of losses. Get feedback on final presentation from Dr. Ajjarapu. Finish the final presentation for Monday, December 5 at 10 am.

- **Summary of weekly advisor meeting (if applicable/optional)**

  We accomplished the following at the meeting:
  - Presented the losses, tap changes, and voltage violations for 20, 40, 60, 80 and 100 percent penetration, and the impact of location of the solar penetration on the losses, tap changes, and voltage violations
  - Discussed the task for upcoming week, which were to add solar PV to every node with load to observe the impact of residential solar power and the percentage change in losses