

EE/CprE/SE 491 WEEKLY REPORT 6 (11/15/19 – 12/6/19)

Group number: 21

Project title: New Simulation Methods to More Effectively Integrate High Levels of Renewable Energy Resources

Client & Advisor: MISO & Dr. James McCalley

Team Members: Jared Rickard; Collins Ntwali; Nidhi Rawell; Jeremy Nash

o **Weekly Summary** – Progress was made obtaining Plexos licenses. The next step is to install the software on virtual machines obtained from the ETG. The base code has all the features it needs now to start approximating all the necessary data for Plexos profile creation.

o Past week accomplishments

- **Jared Rickard:** Updated code to work with multiple CSVs. Also updated code to give the user an option to normalize the data before clustering. Updated design document.
- **Collins Ntwali:** Researched and added to the attribute equations list in our script and started work on the “final” project presentation.
- **Nidhi Rawell:** Researched different studies or found previous work on topics relating to the project, like hierarchical clustering to find representative operating periods.
- **Jeremy Nash:** Ran tests on performance time as well as accuracy increase when increasing the number of clusters. Started the process of downloading Plexos to a virtual machine.

o Pending issues

- **Jared Rickard:** Finding Python libraries that implement clustering algorithms or being forced to write my own implementations
- **Collins Ntwali:** Getting the Industry Agreement forms signed by Advisor & MISO reps.
- **Nidhi Rawell:** Finish the Plexos download
- **Jeremy Nash:** Fix the code to test different number of clusters and output what I’m testing for, assess runtime results, work with Energy Exemplar to continue the Plexos download

o Individual contributions

Name	Individual Contributions	Hours This Week	Hours Cumulative
Jared Rickard	Code writing, testing	12	70
Collins Ntwali	Add to the attribute equations list in our script, contributed to designing project presentation.	10	64
Nidhi Rawell	Research	4	60
Jeremy Nash	Runtime tests, accuracy tests, software prep	6	62

o Plans for the upcoming week

- **Jared Rickard:** Research other clustering algorithm implementations in Python. Start trying Plexos.
- **Collins Ntwali:** Complete Plexos install on other virtual server, practice/review SD presentation.
- **Nidhi Rawell:** Finish the design document, and work on senior design presentation.
- **Jeremy Nash:** Continue accuracy testing, redo attribute tests with scaled attributes, finish the Plexos download, assess runtime results.