EE 491 WEEKLY REPORT 5

October 4th – October 10th

Power system reliability in MISO for high wind/solar levels

Group 23

Client: Midcontinent Independent System Operator

Team Members:

Zaran Claes

Shannon Foley

Matt Huebsch

Shelby Pickering

Ian Rostkowski

David Ticknor

WEEKLY SUMMARY

This week was incredibly bogged down because of midterms that every member of the team had to take. As a team, we put in fewer hours in this week, but some members were still able to make contributions towards the project. David discovered how to create heat maps in Excel and taught the team how to make them as well. These maps let us visually look at what trends exist throughout the MISO wide footprint. They will be incredibly important for future decision making. We have decided that we will use these heat maps of MISO data to make decisions on siting in the future. Zar created useful load profiles and calculated the capacity factors at each bus for all of 2017.

This week was spent discussing the process we would go through to site sources, and how we planned to calculate capacity credit. We discussed the possibility of using probabilistic methods to determine the capacity credit for wind, but decided to stick to using a deterministic method obtained from historical data. Capacity credit was calculated for the top ten load times, and heat maps displaying the geographical locations of these numbers were created to present to MISO during the weekly meeting.

ACCOMPLISHMENTS FOR THE WEEK

Name	Accomplishments	Hrs this week	Total
Zaran Claes	-Attended meeting five -Worked on capacity credit calculations	3	16
David Ticknor	- Created heat maps -Organized data -Shared heat map results at meeting -Looked into efficient ways to get capacity factor averages	6	19
Shannon Foley	- Created meeting Agenda -Started Design Document and assigned writing tasks	3	18
Ian Rostkowski	-Edited Gantt Chart to better represent current schedule -Began working with MISO data to complete Deliverable 1	3	17
Shelby Pickering	-Was out of town most of the week, so spent time when I got back to catch up on the work the team had done and read the minutes from the meeting -Compiled a question regarding siting to ask MISO	1.5	12.5
Matt Huebsch	-Wrote minutes for meeting 5	4	18

PENDING ISSUES

- The team is awaiting PLEXOS software, the main software needed to simulate power models for our project.

INDIVIDUAL CONTRIBUTIONS FOR NEXT WEEK

Zaran Claes- Create capacity credit calculations for each generation type for 2007 and create corresponding heat maps.

David Ticknor - Get PLEXOS working on laptop and personal desktop. Continue mapping data, start in on siting criteria.

Shannon Foley- Next week, I plan to calculate the ELCC for Delegated individual tasks for week 5. This allows us all to complete tasks independently that we need to do for week 6. Set up a weekend meeting outside of normal meeting hours that was optional to help the team get a better grasp on what needs to be done when working with our data.

Ian Rostkowski - Work on getting PLEXOS alongside the rest of the team and assist with my portion of needed calculations to begin siting process. Continue to monitor progress of the group and modify the Gantt Chart if priorities change, or inform group if we are growing behind schedule.

Shelby Pickering – Next week I plan on further familiarizing myself with the data calculations that have already been done, as well as learn how my team created the heat maps. Additionally, I will start to help create the heat maps and begin to consider siting for this project.

Matt Huebsch- I need to write the minutes for meeting six. I need to work on capacity credit and heat maps for 2009