

## **sdmay23-27: 115kV/34.5kV Solar Power Plant & Substation Design Project**

### **Week 1 Report**

September 21 - September 30

#### **Team Members**

Maddy Lakomek — *Researcher*

Brooke Nelson — *Researcher*

Ashton Randolph — *Researcher*

Jacob Miller — *Researcher*

Jenna Runge — *Meeting Minutes Taker*

Omer Karar — *Researcher*

Madissen Lawrence — *Leader*

Zach Zimmerman — *Researcher*

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#### **Summary of Progress this Report**

We had our second meeting with Black & Veatch and will have our third Wednesday of this week. Completed our lightning talk presentation over requirements for the project also with the user needs document and requirement documents. Worked with the Array Analysis tool given to use by Black & Veatch to compare and contrast data sheets of different devices within the substation. We created a Gantt Chart that estimates our timeline for both the solar field and substation project. We compared and contrasted New Mexico with Ames to determine the best location for our solar field, which we eventually decided on in New Mexico. Finally, we met as a group on Thursday and with Professor Ajarapu on Tuesday.

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#### **Pending Issues**

We are unsure about some of the items on the Gantt sheet and the timelines that some parts of the projects should be done in. For example, we need to figure out if we do the grounding layout or grounding calculations first.

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#### **Plans for Upcoming Reporting Period**

We need to create a presentation for Professor Ajarapu that describes what PV is and the IV graphs that correspond with it. This presentation should dive deeper into each component and how they fit together. We need to create different scenarios on the array parameter tool to figure out which will be the best layout. Work on design documentation.

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## Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Maddy Lakomek	Worked on lighting talk, helped present lighting talk, worked on Gantt chart, worked on Array Parameter Tool	4	4
Brooke Nelson	worked on weather requirements for lightning talk, spent time overviewing array parameter tool, presented gantt chart in meeting.	4	4
Ashton Randolph	spent time overviewing the array parameter tool , collaborated with group on one to present during our weekly meeting, worked together on gantt chart, and lightning talk aesthetic slide	4	4
Jacob Miller	worked on physical requirements pertaining to the solar farm and substation, alongside attempting to figure out the array parameter tool	4	4
Jenna Runge	presented part of lightning talk, was gone for conference last week so played catch up on team progress.	4	4
Omer Karar	Found specific location for solar farm, and make comparison and contrast based upon farm price and monthly irradiance. working on the array parameters tool and creating many models. I will work with my group to present the client presentation and light	4	4
Madissen Lawrence	Lead presentation, presented safety moment and new technology, worked on the group tasks (ie gantt chart, lighting talk)	4	4
Zach Zimmerman	determined electrical standards we need to comply to for our designs, completed 2 different design layouts for solar farm using array parameter tool, completed gantt chart during team meeting	4	4

## Gitlab Activity Summary

Nothing to report.

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