EE 491 Weekly Report 10

11/14/2024 to 11/21/2024
Team 41
115/34.5kV Solar Plant & Substation
Client: Black & Veatch
Faculty Advisor: Ajjarapu Venkataramana

Team Members:

Andrew Chizek -- Researcher
David Ntako -- Meetings leader
Ben Palkovic -- - Meeting Recorder
Mohamed Sam -- Technical Lead
Sergio Sanchez Gomez -- Documentation
Dallas Wittenburg -- Team leader

Past Week Accomplishments

Weekly Presentation:

- Collaborated as a team to prepare and deliver the weekly presentation.

Safety Moment:

- Discussed the risk of shock or electrocution from energized conductors, emphasizing the importance of safety protocols.

New Technology:

- Researched and shared insights on solar airplanes as an innovative and sustainable technology.

Bill of Materials:

- Began compiling a Bill of Materials in a spreadsheet, listing all required components for the project.

AutoCAD Drawings:

- Working to update the AutoCAD drawings based on feedback from Black & Veatch.

- And we Continued refining the drawings to ensure accuracy and alignment with project specifications.

add Fence:

- We added a fence around the site's border for security and compliance.

Comment Tracking and Responses:

- created an Excel sheet to organize feedback and comments received from BV.

Pending Issues

- Finding costs of various equipment including the ground mounting system for a bill of materials list.
- Array Parameter Tool – Continue refining the tool based on our client's feedback
- Drawings and Layouts – Implement further changes to the project drawings and explore additional design options
- We still waiting feedback from Black & Veatch about voltage drop calculations.

Individual Contributions

Name	Contribution	Hours this Week	Total Hours
Andrew	Helped look into combining PV cells in parallel and series combinations. Also updated the AutoCAD drawing to have a fence bordering the farm. Looked into more pricing on equipment.	5	36
David	Did some some research on the Physics behind PV module (looked at IV curve) (looked at IV curve). Helped figure out how to edit the title and add some text on Autocad drawing.	5	40
Ben	Worked on updating AutoCAD per Black and Veatch comments. Wrote report for Professor Ajarrapu on the physics of a PV module.	6	44
Mohamed	Helped on research about Series and parallel Connection in PV Systems and helped on BV presentation slide.	5	47
Sergio	Check ground mounting manufacturer specs and contact sales for pricing. Diode and PV module IV characteristics.	4	45

Dallas	Helped created a bill of materials spreadsheeting using Excel with Andrew. Looked into diode and PV module IV characteristics.	5	50

Plans for Coming Week

Action Items for Client

- Start putting together a bill of materials on AutoCAD drawing sheet
- Continu working on the client feedback and provide responses to these comments
- Start working on wiring diagrams for solar farm
- Continue working with AutoCAD drawings – Modify and add to the side profile drawings that show the angle of the panels with respect to the ground, DC combiner box location, mounting of panels to the support system, and panel orientation
- Further expand on cost analysis spreadsheet
- Look into creating a mock site plan drawing