

EE 491 WEEKLY REPORT #5

11/18/19 – 11/25/19

Group number: Sdmay20-14

Project title: 115kV /34.5kV Solar Power Plant & Substation Design Project

Client &/Advisor: Black and Veatch / Venkataramana Ajjarapu

Team Members/Role: (Roles are rotated on an as needed basis) Jake Ciccola (Scribe / Client communications), Ethan Curnutte (Chief engineer), Ada Lupa (Test engineer), Blake Danek (Meeting facilitator), Michael Lortz (Design engineer), Bashir Mohamed (Test engineer)

Weekly Summary: This week, we started looking at the design and construction of substation. We started by figuring out the equipment used in the design of substation as well as the required protection and control hence we will be able to identify and split the tasks between the team.

Past Week Accomplishments: As a group we worked on:

- **Member 1: Jake Ciccola**
 - Received feedback from Black and Veatch regarding our voltage drop calculations and made necessary revisions to our calculations.
 - Signed NDA forms in order to receive substation information.
- **Member 2: Ethan Curnutte**
 - Conducted research on one line drawings in relation to substation drawings.
 - Made revisions to the Voltage Drop calculations for the client and made sure that all numbers were correct for our final version.
- **Member 3: Blake Danek**
 - Got feedback and made revisions to the Voltage Drop calculations. Also reconsider array layout as our client mentioned that it could be designed more efficiently.
- **Member 4: Ada Lupa**
 - Helped revise and edit the voltage drop calculations and have looked into substation design.
 - Make sure that the NDA is sent to Black and Veatch in order to move forward
- **Member 5: Michael Lortz**
 - Implement client remarks for voltage drop calculations, used voltage drop calculation results to make small revisions to plant layout.

- **Member 6: Bashir Mohamed**

- Reviewed papers on substation design, types of transformer, switchgear, batteries for the control and protection circuits .. etc.
- Looked at the regulation for the grid tied converter and the tolerance voltage drop allowed by NEC and IEEE. also I went through through the effects of harmonics and flickers on the general grid.

Pending Issues: There were no issues this week.

Individual Contributions: (Total hours only reflect hours accumulated from weekly reports)

Team Member	Contribution	Weekly Hours	Total Hours
Ethan Curnutte	Research on one-line drawings, also corrections on voltage drop calculations	7.5	35.5
Ada Lupa	Sent out the NDA forms and corrected the voltage drop calculations based on Black and Veatch suggestions from last meeting. Begin research into substation design and the types of stations that Black and Veatch had used before.	7	33
Jake Ciccola	Sent out meeting minutes to client. Sent our meeting agenda to client (with updated voltage drop calculation). Started to research substation information for upcoming assignment.	6	34.5
Blake Danek	Made revisions to voltage drop calculations. Also looked into how different array designs would impact our wire length and overall voltage drop.	6	35
Michael Lortz	Create a legend for autoCAD drawings, revise plant layout, implement client remarks into voltage drop	7	33.5
Bashir Mohamed	Reviewed papers on substation design, types of transformer, switchgear, batteries for the control and protection circuits .	6	32

Plans For The Upcoming Week:

- **Member 1: Jake Ciccola**
 - Start to work on substation topics once the NDA forms clear. Work on the design document for the review session.
- **Member 2: Ethan Curnutte**
 - Work on design document for the final review, also start researching substation information that will be given from client.
- **Member 3: Blake Danek**
 - Work on design document and other deliverables needed for end of the semester. Begin working on new substation work once NDA and IP forms get cleared.
- **Member 4: Ada Lupa**
 - Make sure NDA forms get signed
 - Work on final review document for the presentation
 - Address the substation with Black and Veatch and begin to draft ideas.
- **Member 5: Michael Lortz**
 - Finalize solar plant and set up CAD sheets for design document. Transition into substation design.
- **Member 6: Bashir Mohamed**
 - Contributed some Ideas for the layout of the substation, also Reviewed papers on substation design, types of transformer, switchgear, batteries for the control and protection circuits

Summary Of Weekly Advisor Meeting: (If applicable/optional)

(Provide a concise summary on the contents and progress made during the advisor meeting.)

Grading criteria

Each weekly report is worth 10 points. Scores will be awarded as follows:

8 – 10: Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.

6 – 8: There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.

< 6: Please talk to instructors/TA after class hours about any difficulties

that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.