

EE 492 WEEKLY REPORT #3

2/17/2020 – 2/24/2020

Group number: Sdmay20-14

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

Client &/Advisor: Black and Veatch / Venkataramana Ajarapu

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 our primary focus was creating a preliminary bus plan for the substation. In addition to this, we had to make corrections on our one-line diagram and our zones of protection based on feedback from the client.

Past Week Accomplishments: As a group we worked on:

- **Member 1: Jake Ciccola**
 - Used provided documents/ examples to create a preliminary bus plan for our substation. Began research into bus calculations.
- **Member 2: Ethan Curnutte**
 - Started to implement ground grid calculations into an excel file for clients. Also made revisions to the bus diagram.
- **Member 3: Blake Danek**
 - Assisted in designing the first bus plan. Researched clearances and spacing of equipment in the substation.
- **Member 4: Ada Lupa**
 - Helped create updated version of bus plan
 - Researched and began to work with the grounding calculations
 - Uploaded documents to website
- **Member 5: Michael Lortz**
 - Drafted CAD layout of substation
- **Member 6: Bashir Mohamed**
 - Worked on the bus plan such as the spacing required for the equipment & the spacing and insulation between the conductors as well.

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Ethan Curnutte	Calculated soil resistivity for ground grid calculations. Input into bus line diagram for specific changes.	7	39
Ada Lupa	Uploaded Report to website. Helped update the naming structure of the bus plan, and talked to the client about the changes that still need to occur. Looked into and began grounding calculations	6.5	38.5
Jake Ciccola	Created meeting agenda and meeting minutes for client. Helped create a preliminary bus plan.	6.5	38.5
Blake Danek	Labeled the one-line diagram and drew zones of protection so that we could receive more in depth feedback from our client. Researched IEEE spacing clearances	6	38
Michael Lortz	Drafted CAD layout using Black and Veatch supplied objects	8	38
Bashir Mohamed	Reviewed IEEE 80 code for grounding design. Calculating step & touch voltage, conductor sizing for the ground grid design.	7	39

Plans For The Upcoming Week:

- **Member 1: Jake Ciccola**

- Look at feedback from the client and update the bus plan, the one-line diagram, and the zones of protection to the proper specifications.
- **Member 2: Ethan Curnutte**
 - Update one line and bus diagrams per clients requests, also continue to work on ground grid calculations.
- **Member 3: Blake Danek**
 - Use feedback from our client to revise the one-line and bus plan. Must update the spacing in the bus plan so that it meets clearances and so that we can begin work on the grounding calculations.
- **Member 4: Ada Lupa**
 - Update the zones of protection in terms of layout
 - Send out grounding calculations and design to get checked by Black and Veatch
- **Member 5: Michael Lortz**
 - Change CAD layout according to grounding calculations
 - Implement markups sent back from Black and Veatch
- **Member 6: Bashir Mohamed**
 - Incorporate any suggested updates from Black & Veatch.
 - Finish up the design of the grounding grid.