EE 492 WEEKLY REPORT #2

2/3/2020 - 2/9/2020

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: During this work week, our group has continued working on our one-line diagram by making changes and additions recommended by our client. Some of the things we changed were adding an extra line to our bus to accommodate the load and also labeling all our components.

Past Week Accomplishments: As a group we worked on:

- **Member 1: Jake Ciccola**
    - Researched zones of protection and how to implement them in our design. Helped finalize our ring bus design and present it to the client.
- **Member 2: Ethan Curnutte**
    - Went into detailed drawings of substation materials to figure out the correct system in which to label all substation parts. Started to look at bus plans and specific layouts of a 115 kV substation.
- **Member 3: Blake Danek**
    - Looked into the correct method for labeling substation components which utilized ASCII characters. Then I found the characters that would be needed in our one-line and added them to the diagram. I also did more research into zones of protection and how they can be drawn in our specific situation.
- **Member 4: Ada Lupa**
    - Went through the ASCII characters and finalized which ones would work best for our labeling needs. Helped updated version of the ring bus design and looked into other design options (rather then the ring bus) to create a comparison.
- **Member 5: Michael Lortz**
    - Incorporated more details into the one-line-diagram. Reformatted sheet template to meet Black and Veatch standard design procedures.

- **Member 6: Bashir Mohamed**
    - Researched information pertaining to the one-line in order to finalize the design for the client.

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Ethan Curnutte	Researched different naming systems for substation one line diagrams. Also helped lead weekly meeting with client and make meeting agenda.	6	14
Ada Lupa	Revised the one-line diagram by adding a breaker and changing the labels. Helped look into zones of protection and figured out where they would be on the design. Updated client with our progress during the meeting.	6	13.5
Jake Ciccola	Made a weekly report and sent it to the client. Help research various aspects of a one-line diagram.	6	14
Blake Danek	I researched the ASCII characters and then labeled our revised one-line diagram. I also researched zones of protection and where to draw them on our bus design.	6	14.5
Michael Lortz	Incorporated more details into the one-line-diagram. Reformatted sheet template to meet Black and Veatch standard design procedures.	5.5	19.5
Bashir Mohamed	I researched on characteristics of insulation, clearances and substation.Also I reviewed the abbreviation of basic insulation levels too.	6	13

Plans For The Upcoming Week:

- **Member 1: Jake Ciccola**
    - Use client feedback to correct any problems identified in our preliminary one-line design. Use the provided examples to start developing our bus plan.
- **Member 2: Ethan Curnutte**
    - Finalize details for the bus system and complete layout of substation. Recognize possible mistakes in layout design.
- **Member 3: Blake Danek**
    - For this next week, I plan on using the feedback given from our client on the one-line to fix small details and finalize the zones of protection. Also, I will begin working on the bus plan so that we can provide a rough draft to our client.
- **Member 4: Ada Lupa**
    - Begin developing the bus plan with the feedback in mind after this week's presentation of our updates to the client. Make sure that the ring bus is our chosen type since last time we were still somewhat unsure of it.
- **Member 5: Michael Lortz**
    - Draft layout plan into AutoCAD using equipment symbols provided by Black and Veatch.
- **Member 6: Bashir Mohamed**
    - I will research more typical substations and clearances focusing on NESC guard clearances,and ANSI standards as well.
    - I will go back again and review the topic of protection zoning.