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## EE/CprE/Se 492 WEEKLY REPORT 7

March 11, 2019- March 15, 2019

Group Number : sdmay19-17

Project Title: Substation Design

Client: Burns & McDonnell

Advisor: Manimaran Govindarasu

### Team Members:

Jacob Heiller- Controls Engineer

Rebecca Franzen- Studies Engineer

Connor Mislivec- Quality Control Specialist

Riley O'Donnell- Administrator

Tom Kelly- Project Manager

Wilson Pietruszewski- AutoCAD Engineer

Nicolaus Cory- AutoCAD Engineer

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### Weekly Summary:

This week we received final approval from Burns and McDonnell for our first deliverables, the AC and DC studies and reports. The majority of this week was then spent working on the 3D model. We determined that we wanted to print the single transformer, all three 138 kV breakers and the single 69kV breaker. We then had to determine a scale that still fit within the constraints of the 3D printer. After this was completed, we sent our design to Burns and McDonnell for preliminary feedback. Since we had received feedback from our client last week on the one-line, we performed a full QC on it after incorporating all comments. This was to ensure that we had picked up all comments and that we did not have any other mistakes. A few of the group members continued to work on breaker schematics and continued to look at previous drawings to better understand the scope.

### Past Week Accomplishments:

- Finished 3D Model of breakers and transformers- Riley and Wilson
  - Scaled model to be able to print
  - Made modifications to ensure 3D printer could print our design
  - Sent design to 3D team at Burns and McDonnell to receive feedback
- Breaker schematic research- Wilson, Jake, Tom and Connor
  - Looked at example breaker schematics given by Burns and McDonnell
- Performed QC check on one-line- Connor and Jake
  - Final review after incorporating client comments

- Finalized AC study report- Nic
  - Sent AC study to Burns and McDonnell after ensuring all comments were incorporated
  - Received full client approval for final AC study
- Finalized DC study report- Becca
  - Sent DC study to Burns and McDonnell after incorporating all comments given by Burns and McDonnell last week
  - Received client approval on DC study and report
- Start researching the breaker schematics - Tom, Jake, and Connor

**Pending Issues:**

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**Individual Contributions:**

Name / Role	Individual Contribution	Hours this week	Cumulative Hours
Rebecca Franzen	Finalized DC Study and Report	2	118
Jacob Heiller	QC Check on One-line, Breaker Schematic Research	2	119
Tom Kelly	Breaker Schematic Research	2	115
Connor Mislivec	Breaker schematic research, Look into poster requirements	2	113.5
Riley O'Donnell	3D Model	5	123
Wilson Pietruszewski	3D Model	5	124.5
Nicolaus Cory	Finalized AC Study and Report	2	52.5

Comments and extended discussion:

Plan for the coming week:

- Create presentation for one-line diagram- Jake
  - Describe methodology of one-line diagram

- Show completed diagrams
- Perform QC check on DC transformer schematics- Riley and Wilson
- Visit Burns and McDonnell- Everyone
- Finalize 3D print design- Wilson and Riley
  - Make modifications to fix overhangs
  - Split parts up to be printed separately
- Continue work on DC transformer schematics- Riley and Wilson
- Look into poster requirements/brainstorm- Everyone
- Start preliminary design for Breaker Schematics - Jake, Tom, and Connor

Weekly Advisor Meeting Summary:

- Discussed project schedule
- Discussed future presentations for the rest of the semester
- Discussed various aspects of the project, especially the one-line