
EE/CprE/SE 492 BIWEEKLY REPORT 07

01/25/2021 – 02/08/2021

Group number: SDMAY21-04

Project title: 138kV Cyclone Substation Design

Client &/Advisor: Burns & McDonnell

Team Members/Role: Chandler Cox (Meeting Facilitator), Owen Swanberg (Scribe), Zachary Lewis (Report Manager), Aladdin Adam (QA/Qc Manager), Mohammad Habib (Report Manager), Joseph Miller (Head Engineer)

○ **Bi-Weekly Summary**

After returning from winter break, the team met to discuss goals for the semester. During this meeting we also set times for when we would meet with the client and internally. We organized the timeline of the semester and finalized the deliverable dates. We began to finalize the work on both the AC/DC study and the lightning study. Both of these are expected to be completed by 02/19/2021.

○ **Past week accomplishments**

- Chandler Cox – Finalized the AC loads table for energized and construction(temporary) loads. Chandler also created a report for the AC study which is the deliverable accompanying the aforementioned table.
- Owen Swanberg - Studied battery sizing as it pertains to the IEEE standard 485. Owen also worked on load studies for the eight-hour emergency timeline to specify the DC loads in the substation.
- Zachary Lewis – Completed the executive summary for the lightning study report. Zachary also performed calculations to calculate the amount of the substation both protected and unprotected by the lightning protection. Lastly, Zachary began working on calculating the failure rate of the lightning protection scheme.
- Aladdin Adam – Aladdin has been out of the country dealing with a family emergency.
- Mohammad Habib – Mohammad worked with Owen to study the battery sizing. Mohammad assisted in determining the DC loads such that we can adequately size a battery system for the substation
- Joseph Miller – Cleaned up the drawings pertaining to the lightning study created in the previous semester. Joseph also began to formalize the lightning study report so that the client can easily see what needs to be done to protect the substation from lightning strikes.

○ **Pending issues**

- We need to discuss with Burns & McDonnell the following items:
 - The timeline we have set for the deliverables in the project
 - Discuss the lightning strike calculations as they pertain to failure rates
 - The status of the software required for the grounding study
 - Determine the relay currents required for the DC study

○ **Individual contributions**

Name	Individual Contributions	Hours this week	Semester Hours
Chandler Cox	AC/DC Study	8	8
Owen Swanberg	AC/Dc Study	8	8
Zachary Lewis	Lightning Study	7	7
Aladdin Adam	Family Emergency	0	0
Mohammad Habib	AC/DC Study	7	7
Joseph Miller	Lightning Study	8	8

○ **Plans for the upcoming week**

- Chandler Cox – Work on finalizing the AC report upon receiving comments. Shift focus onto the DC study.
- Owen Swanberg – Continue to work on the DC study focusing on battery sizing.
- Zachary Lewis – Work on finishing the lightning study report by calculating the failure rates of the lightning protection.
- Aladdin Adam – Work on the lightning study to check the calculations performed by Joseph and Zachary.
- Mohammad Habib – Continue to assist in the AC/Dc studies focusing on battery sizing and determining DC loads.
- Joseph Miller – Finish work on the lightning study and pass it off to Aladdin to check calculations.