

EE/CprE/SE 491 WEEKLY REPORT 4

Start Date - February 20, 2024

End Date - February 27, 2024

Group Number: 02

Project Title: Ames Substation

Client &/Advisor: Burns & McDonnell / Hugo Villegas

Team Members/Role:

Derek Elkins - Project Lead

Patrick Musoy - Pilot Scheme Researcher

Mackenzie Ray - Meeting Manager

Nathan Tegeler - Pilot Scheme Researcher

Matthew Wells - Pilot Scheme Researcher

Weekly Summary:

This week, the piloting team met to create a report discussing our piloting scheme selection. We began researching and specifying what SEL relays to use for each scheme. This included discussing our reasoning for selecting each relay based on what we learned from research.

Past Week Accomplishments:

Mackenzie Ray: I completed the bus configuration report and changed our selection for the bus configuration design based on reviewing bus configurations for different power outputs.

Patrick Musoy: Finalized on researching pilot schemes for different transmission line protection. Relays selection, researching on the bus configuration & protection, and distinguishing the different relays functions.

Derek Elkins: I worked with Mackenzie to complete the bus configuration report. I also downloaded CAD and started exploring the features of the software.

Nathan Tegeler: Completed Piloting report and helped the piloting team with relay selection. Finalized notes on bus protection based on selected bus configuration. Researched reclosing and determined that using on lines near generators is not advised, and manual reclosing is recommended due to out of phase currents.

Matthew Wells: Completed the draft report for pilot schemes. Selected relays for primary and secondary schemes on the line, as well as circuit breakers, transformers, and bus protection. Determined that auto-reclosing is not viable for the solar farm line.

<u>Name</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>Cumulative Hours</u>
Derek Elkins	Bus Configuration Report & CAD Exploration	2.5	7
Patrick Musoy	Relays selections and documentaries on its utilization.	2	9
Mackenzie Ray	Bus configuration report	2	6.5
Nathan Tegeler	Relaying selection documentation. Notes on bus protection and transformer protection	3	13
Matthew Wells	Pilot scheme and relay research/selection.	3	10

Action Item Table

Status	Action Item	Assigned to	Due Date	Priority	Notes
Completed	Bus configurations	Derek Kenzie	2/20	high	Report is done. Will get feedback regarding report.
Not started	Sight layout	Derek Kenzie	3/19	Medium	
Complete	Piloting scheme report for transmission lines	Patrick Nathan Matt	2/27	high	Completed selection for relays
Not started	Relay and I/O requirements	Patrick Nathan Matt	4/30	low	
In progress	Transformer protection scheme	Patrick Nathan Matt	3/4	High	

Plans for Upcoming Week

Mackenzie Ray: Start looking at the design and layout plans for our ring bus configuration. I also need to figure out how to get AutoCAD for students.

Patrick Musoy: Finishing and finalizing the pilot scheme and selection of relays with the client and start researching the relay and I/O requirements.

Derek Elkins: I will be starting the designs for the bus configurations. I will complete the elevation design and the one line.

Nathan Tegeler: Review piloting scheme with client and make any necessary changes. Begin work on relaying and I/O requirements.

Matthew Wells: Make some small changes to the pilot scheme and relay report based on notes from the client/advisor meeting Monday. Start researching the I/O assignments.