
Black & Veatch's 138kV/13.8kV Substation Design Project

SDMay18-06

Faculty Advisor: Dr. Ajjarapu

EE 491 Weekly Report 5

Date: 10/5 to 10/11

Andrew Brown	-AutoCAD Director, Design Engineer
Eric Fritz	-Meeting & Communication Director, Test Engineer, Design Engineer
Brent Hines	- Project Lead, Materials, Executive Budget lead, Design Engineer
Gavin Christensen	-Chief Design Engineer
Weng Hoong Loo (Terry)	-Scheduling, Design Engineer

Summary of Progress this Report

- The main focus this week was to work on the key protection plan. The whole team contributed
 - Modified relay CB317
 - Removed unnecessary voltage regulation devices
 - Added various tripping busses to correspond to the scope document B&V provided.
 - Individual contributions can be shown in the table below.
- Final Key Protection Plan to be submitted to Black & Veatch Monday 10/16.
- Terry continued to investigate Weebly
- Documents saved under AUTOCAD 2018 do not open in other drawing software.
 - Must save files under AUTOCAD 2013 to open in software other than AUTOCAD.

Pending Issues

- Continue to work on the key protection plan

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Andrew Brown	B&V meeting, modified the key protection plan (KPP) to match standards laid out in project scope, drafted KPP changes in AutoCAD	10	37
Gavin Christenson	B&V, and Advisor meetings, modified the KPP. I studied the scope document given by B&V and, after printing out a copy of the KPP, made marks on it for changes I expected to be made. I reviewed the changes made by the others and checked for any needed changes.	8	27
Eric Fritz	B&V, and Advisor meetings, modified the KPP. I revisited the usability of AutoCAD after reports of unusability. I found that AutoCAD 2018 works exactly as intended and the team then ceased their use of Draft Site. I found the steps required to make .dwg files from AutoCAD 2018 compatible with Draft Site. This is done by creating a 2013 .dwg file type instead of the default 2018.	7	28
Brent Hines	B&V, and Advisor meetings, modified the KPP. Made specific changes to CT current transformers, Primary Bank Relay 1, Backup Bank Relay 1, reviewed the updated relay document provided by B&V, updated team website.	9	34
Weng Hoong Loo	B&V, and Advisor meetings, modified the KPP, studied Weebly, reviewed the B&V's relay documents, reviewed the	9	29

(Terry)	modified KPP, studied AutoCAD		
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Plans for Coming Week

- Incorporate the Qs and Ks in the one-line diagram into the KPP
 - Create a key on what these symbols mean.
- Change the ratio in the 4 th line of the breaker's high side.
- Nearly complete the KPP by Monday, October 16, 2017.
- Remove all logos, names and other identifying features in the documents and replace them with ones that reflect our team.
- Be sure to change the highlighted areas in the KPP
- Renumber the documents to organize by function
- Begin reviewing the AC protection documents provided by B&V