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

SDMay18-06

Faculty Advisor: Dr. Ajjarapu

EE 491 Weekly Report

Date: 9/28 to 10/4

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

Summary of Progress this Report

- The whole team continued to find the differences between the one line diagram and the key protection plan. Then the key protection plan was updated to agree with the one line diagram.
 - Some changes: MRBCT CONN was changed from 1200:5 to 2000:5, labeled Bank 1, labeled circuit siwtcher 11, labeled 138KV BUS 1, removed 89-3 motor.
- Andrew Brown found 'Draft Site' to be a better diagram editor than 'AutoCAD'.
- Improved document readability by adding revision clouds to changes, version numbers and the editor's initials.
- A document was created that contains the ANSI numbers for the devices included in the design documents.
 - Components used in our substation were highlighted for our reference.
- Terry learned Weebly and is utilizing it to improve the team website.

Pending Issues

- Finalize the Key Protection plan
 - Identify the various relays in which the current will travel
 - Make appropriate changes to the relays corresponding to the one-line diagram
- Improve version control of the documents
- Become familiar with the relays
- Become familiar with the causes of trips.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Andrew Brown	B&V, and Advisor meetings, worked on key protection plan	10	27
Gavin Christenson	B&V, and Advisor meetings, created the ANSI sheet	9	19
Eric Fritz	B&V, and Advisor meetings, weekly report and meeting agenda to B&V	8	21
Brent Hines	B&V, and Advisor meetings, worked on key protection plan, removed unnecessary voltage regulators, updated CT transformer ratings, read and made a note sheet on the High Voltage Substation powerpoint given by Dr. Ajjarapu.	9	25
Weng Hoong Loo (Terry)	B&V, and Advisor meetings, created the ANSI sheet,	9	20

Plans for Coming Week

- Continue to work on the One-Line Diagram and Key protection plan
- Read and become familiar the new project description document provided by B&V
- Create a version history on the KPP and other documents
- Look into the relays and how they behave in the substation
- The KPP needs to be finished very soon and so the efforts will increase