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

SDMay18-06

Faculty Advisor: Dr. Ajjarapu

EE 492 Weekly Report 3

Date: 2/10/2018 to 2/23/2018

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| Andrew Brown | -AutoCAD Director, Design Engineer |
| Eric Fritz | -Meeting & Communication Director, Test Engineer, Design Engineer, Quality Assurance |
| 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

In our meetings we emphasize safety through continuing education. We rotate through our team and each week one person presents on an issue they deem important. In this period we covered tornado safety and flu safety.

The drawings we completed were the 3 feeder diagrams(1806-015, 1806-016, 1806-017), and the AC and DC auxiliaries(1806-004, 1806-025). In the ABS switch document(1806-018) minor corrections were made under the advisement of our clients at Black and Veatch.

The feeders were largely straight forward due to them being largely the same drawing. Simply put the difference between them is you replace “feeder 1” with “feeder 2”. The initial creation of feeder 1 was far less straightforward.

Pending Issues

We have yet to select a transformer for the control house for which we have already complete calculations complete. The drawings have been a priority thus pushing this back.

We will update our project description document by implementing the feedback gained from our first PIRM review.

Individual Contributions

| Team Member | Contribution | Weekly Hours | Total Hours |
|-------------------|---|--------------|-------------|
| Andrew Brown | Completed diagrams for circuit breakers & protection and control on feeders 1-3 (drawings 1806-015,016,017), cross referencing appropriate three-line and auxiliary drawings for consistency. Assisted in presentation for PIRM #1. | 22 | 123 |
| Gavin Christenson | Completed the ABS diagrams and started work on the Breaker Failure relay. | 15 | 119 |
| Eric Fritz | Reviewed completed documents and corrected minor mistakes in the naming of components on the documents. These errors include drawing number typos in 1806-004. I recorded the details of the meeting with Black and Veatch and reported them in the prescribed bulleted format. | 17 | 148 |
| Brent Hines | Completed the DC and AC calculations of every | 20 | 164 |

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| | component entailed in the substation. From here, we will choose an appropriate transformer to power the control house. Completed the AC and DC AUX drawings, making minor changes to various components. Assisted in presentation for PRIM#1. | | |
| Weng Hoong Loo (Terry) | Internally reviewed completed documents and ensure errors were caught before submitted he drawings to be checked by the client. Completed the PRIM#1 presentation slides. | 17 | 118 |

Plans for Coming Week

In the next 2 weeks we will complete the remaining 7 drawings.