

## EE 491 Weekly Report | May15-01 | Week 10 (11/3/14 -11/10/14)

**Advisors:** Adam Literski, Dr. Ajjarapu      **Client:** Black & Veatch Corporation

**Members (roles):** Matt Backes (Team Leader), Ryan Jerve (Communications Leader), Faran Malik (Communications Leader), Sohail Suryavanshi (Webmaster), Bhargav Gouni (Key Concept Holder), Kiran Rane (Key Concept Holder)

**Project Title:** 69kV / 12kV Substation Design Project

### **Weekly Summary:**

This last week we met as a group on 11/4 and discussed some of the individual work that we have been working on. Some of us were modifying the protection diagrams and some of us were ensuring that the lines to the relays were correct. During our advisor meeting, we talked to Adam, Josephine and Professor Ajjarapu about the protection diagrams and we found out we had a few more misconceptions about our project. This meeting allowed us to clear up some of the misconceptions we had.

### **Meeting Notes:**

#### **10/29 Group Meeting with Advisors**

Before the meeting, we sent an email to Adam and Josephine of the updated one-line diagram and the individual protection relays that some of our team members have been working on. During the meeting, Bhargav and Kiran received feedback over the one-line and changes were made based off of the feedback, so now the one-line diagram is complete. Josephine and Adam suggested using the exact terminology which is mentioned in the scope and to not delete the future expansion option. Matt was updating the primary relay model from an SEL 387 to SEL 487E and B&V sent this model drawing to us. Ryan and Faran were ensuring that the lines to the relays were correct. However, it was discovered that Bhargav was also working on this so the work was redundant. Because of this, Ryan and Faran started working on the Low Side Breaker drawing. During the meeting Ryan and Faran asked questions about the lowside breakers over disconnected inputs and outputs as well as where to represent the connection of the alarm output to the SEL 2440.

#### **10/21 Group Meeting**

During our weekly team meeting (led by Bhargav), we went over each member's work. We went over the finalized one-line diagram and the new primary relay model that was sent to Matt. There were many questions that we had regarding to the relays. Sohail worked on the Bank 1 circuit switcher. Faran and Ryan took on the Low Side Breaker drawing. Bhargav and Kiran worked on ensuring that the lines to the relay were correct and modified the I/O assignment changes to the 487 relay. Matt and Kiran are working on the project plan. The following are the individual tasks that each person needs to work on during this next week:

- 1.) Sohail and Matt: Finish adding new terminals to the relays
- 2.) Bhargav and Kiran: Try to understand Schweitzer datasheets
- 3.) Ryan and Faran: Working on the low side breaker drawing.

### **Pending Issues:**

1. Continuing the entire design process
2. Read the entire project scope and use that information for our drawings
3. Cost Estimate for 3D substation Model

4. Data sheet and the project scope inputs and output assignments do not match up. Make changes to the scope based on the data sheet.
5. Work on the protection and relay drawings and have those done before Thanksgiving break.

#### **Plans for Next Week:**

Tasks for each team member:

- 1.) Sohail and Matt: Finish adding new terminals to the relays
- 2.) Bhargav and Kiran: Trying to understand the Schweitzer data sheets
- 3.) Ryan and Faran: Working on the low side breaker drawing.

#### **Current Individual Contributions**

- Matt Backes: Attended weekly meetings. Worked on primary relay drawing and project plan (7.5 hours)
- Faran Malik: Attended weekly meetings. Worked on the low side breaker drawing. Worked on weekly report. (5 hours)
- Ryan Jerve: Attended weekly meetings. Worked on the low side breaker drawing. Worked on weekly report. (5 hours)
- Sohail Suryavanshi: Attended weekly meetings, worked on backup relay drawing, worked on project plan, and worked on website (6 hours)
- Bhargav Gouni: Attended weekly meeting, work on key protection diagram, modified i/o assignments for SEL 487E relay. (5 hours)
- Kiran Rane: Attended weekly meetings, worked on project plan. Edited and added sections for testing, process, details, validation and acceptance test, technical approach and constraint section. (5.5 hours)

#### **Total contributions for the project:**

- Matt Backes (46.5 hours)
- Ryan Jerve (41.5 hours)
- Faran Malik (41.5 hours)
- Kiran Rane (42 hours)
- Sohail Suryavanshi (42 hours)
- Bhargav Gouni (42 hours)