

EE 491 Weekly Report | May15-01 | Week 4 (9/22/14 - 9/29/14)

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:

The main goal this week was to analyze the documents sent to us by Adam Literski and use them to gain a better knowledge of substations. We met as a group and analyzed the one-line diagrams Adam sent to us. We also started learning how to use Autocad, which is used for one-line diagrams. We divided up areas to research and will upload the information on a google document for general substation knowledge. In our meeting with Dr. Ajjarapu, we asked him some questions about the one-line diagrams. We also decided to have a different person lead our team meetings every week. Lastly, Kiran drafted a project plan for the group.

Meeting Notes:

9/24 Group Meeting with Advisors

We met with Dr. Ajjarapu on September 24th and asked him some questions about the one-line diagrams sent to us by Adam. We were confused about a transformer labeled "Outside Station Power" which stepped the voltage down to 120/240V. Dr. Ajjarapu believes that this is our substation's power supply. There also were three different current transformer symbols on the one-line diagram in series with differing ratings, and we didn't understand why. Dr. Ajjarapu told us that the three symbols actually were one CT with three different taps. Dr. Ajjarapu believes we should focus on gaining a strong understanding of the concepts behind substations, and asked us to give a presentation on substation basics in two weeks.

9/21 Group Meeting

During our weekly team meeting, we discussed our findings from the material that Adam and Dr. Ajjarapu sent us. As a group, we went over the high and low level one line diagrams in AutoCAD and familiarized ourselves with the symbols utilized in the diagrams. Moreover, we went over protective components such as circuit switchers, surge arrestors, etc. We also analyzed each transformer and its purpose in the one-line diagrams. Along with this, we assigned different tasks to each team member for this week:

- Bhargav: Create a description document for equipment
- Matt: Create a Gantt Chart
- Faran & Ryan: Look up info on sectionalized radial buses
- Sohail: Start working on the website
- Kiran: Create draft of project plan

Additionally, we have decided to switch up the task of creating the agenda.

Pending Issues:

1. Continue researching transmission substations. Upload basic information to our google document.
2. Develop an engineering man-hour budget after we have gotten ourselves familiarized with the

- material and what exactly we need to do
3. Create a presentation on substation basics to present to Dr. Ajjarapu in three weeks.

Plans for Next Week:

1. Continue familiarizing ourselves with transmission substations
2. Work on our individual tasks
3. Meet with Adam Literski and ask him specifics about the documents he sent us.
4. Find a new time for a group dinner.
5. Plan our presentation for Dr. Ajjarapu.

Current Individual Contributions

- Matt Backes: Attended group meeting and weekly meeting with Dr. Ajjarapu, Research/Reviewing documents, created Gantt Chart, helped draft project plan (5 hours)
- Faran Malik: Attended group meeting and weekly meeting with Dr. Ajjarapu, worked on weekly report, Research/Reviewing documents (4 hours)
- Ryan Jerve: Attended group meeting and weekly meeting with Dr. Ajjarapu, worked on weekly report, Research/Reviewing documents (4 hours)
- Sohail Suryavanshi: Attended group meeting and weekly meeting with Dr. Ajjarapu, Research/ Reviewing documents and one-line diagrams (5 hours)
- Bhargav Gouni: Attended group meeting and weekly meeting with Dr. Ajjarapu, Research/ Reviewing documents, created general information document (5 hours)
- Kiran Rane: Attended weekly meeting with Dr. Ajjarapu and Adam, Research/Reviewing documents, drafted project plan (5 hours)

Total contributions for the project:

- Matt Backes (11 hours)
- Ryan Jerve (10.5 hours)
- Faran Malik (10.5 hours)
- Kiran Rane (10.5 hours)
- Sohail Suryavanshi (10.5 hours)
- Bhargav Gouni (10.5 hours)