

EE 491 Weekly Report | May15-01 | Week 4 (9/30/14 -10/6/14)

Advisors: Adam Leterski, 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 week we met as a group on 9/30 to discuss potential questions for Adam about the project, as well as review the Gantt chart Matt made and finalize a draft of our project plan. We met with Adam and Dr. Ajjarapu on 10/1 to discuss our questions and seek input on a good starting point for the design process. Bhargav created a Google document about substation basics that the team has been editing so we can improve our basic knowledge of substations. Sohail started designing our team website. Matt has arranged for the group to tour a substation nearby.

Meeting Notes:
9/24 Group Meeting with Advisors
We met with Dr. Ajjarapu and Adam Leterski on 10/1 to clarify some confusion with the project. Our project description said we were to design a transmission substation, but the voltage levels corresponded with a distribution substation. Adam confirmed that our project is a distribution substation and our directions were incorrect. Adam suggested that a good starting point for our project would be finding out needed equipment and equipment sizing.
We had been having issues with our AutoCAD programs not recognizing certain objects in Adam's drawings, and Adam found out that we're using different versions of AutoCAD and our version doesn't recognize all of the same objects. He sent us some AutoCAD file attachments to fix the problem.
Matt sent Adam the Gantt chart so he could give us feedback on our project timeline. Adam reorganized the timeline a bit. We had "design physical layout and grounding" and "complete bus and insulator design" as two different steps, and Adam combined them into one step.
Every week we will have a different team member leading the advisor and group meetings. This week Faran led the meetings.

9/21 Group Meeting
During our weekly team meeting (led by Faran), we discussed possible questions to ask Adam. We noticed that the substation's voltage levels indicated that it was a distribution substation when our project description said the substation was a transmission substation. Our AutoCAD programs have not recognized some of the objects in the files that Adam sent us, so we made sure to discuss that issue with him. We looked over a Gantt chart that Matt had developed. He laid out a tentative plan for completing our tasks by the end of the year. Kiran and Matt began developing a draft of our project plan, which was completed later in the week. Bhargav created a Google Document for general information on substations and our group went through it to improve our knowledge. The group has been updating it with additional information since it was uploaded. We also will give Dr. Ajjarapu a presentation on substation basics next week, so we split up tasks for the slideshow:
-Bhargav: Physical layout

- Matt: Protective relaying, instruments, transducers, and meters
- Faran: Major equipment
- Ryan: AC & DC auxiliary systems, control house, and communications
- Sohail: Site, structures and foundation
- Kiran: Grounding, insulated cables and raceways

Pending Issues:

1. Not having the same version of AutoCAD as Adam
2. Starting the design process

Plans for Next Week:

1. Give a presentation on substation basics to Dr. Ajjarapu
2. Find a time to tour a substation
3. Review the AutoCAD drawings and panel layout drawings
4. Find a new time for a group dinner

Current Individual Contributions

- Matt Backes: Attended group meeting and weekly meeting with Dr. Ajjarapu, helped draft project plan with Kiran, gantt chart, organized trip to substation, created slides on protective relaying, instruments, transducers, and meters for our presentation (7.5 hours)
- Faran Malik: Attended group meeting and weekly meeting with Dr. Ajjarapu, worked on weekly report, created slides on substation equipment for our presentation (4.5 hours)
- Ryan Jerve: Attended group meeting and weekly meeting with Dr. Ajjarapu, worked on weekly report, created slides on AC & DC auxiliary systems, control house, and communications (4.5 hours)
- Sohail Suryavanshi: Attended group meeting and weekly meeting with Dr. Ajjarapu, looked at specifications and ratings for CTs, PTs, surge arresters, and transmission lines in the layout, started designing website, researched soil and grounding for the substation site, created slides on site, structures and foundation for our presentation (6.5 hours)
- Bhargav Gouni: Attended group meeting and weekly meeting with Dr. Ajjarapu, updated general information document with equipment and bus configuration info, created slides on physical layouts for our presentation (5 hours)
- Kiran Rane: Attended weekly meeting with Dr. Ajjarapu and Adam, drafted project plan, created slides on grounding, insulated cables and raceways for our presentation (6 hours)

Total contributions for the project:

- Matt Backes (18.5 hours)
- Ryan Jerve (15 hours)

- Faran Malik (15 hours)
- Kiran Rane (16.5 hours)
- Sohail Suryavanshi (17 hours)
- Bhargav Gouni (15.5 hours)