



### Project Aim

Evaluate the performance of Medium Voltage and Low Voltage electricity supply system at PMU using ETAP software

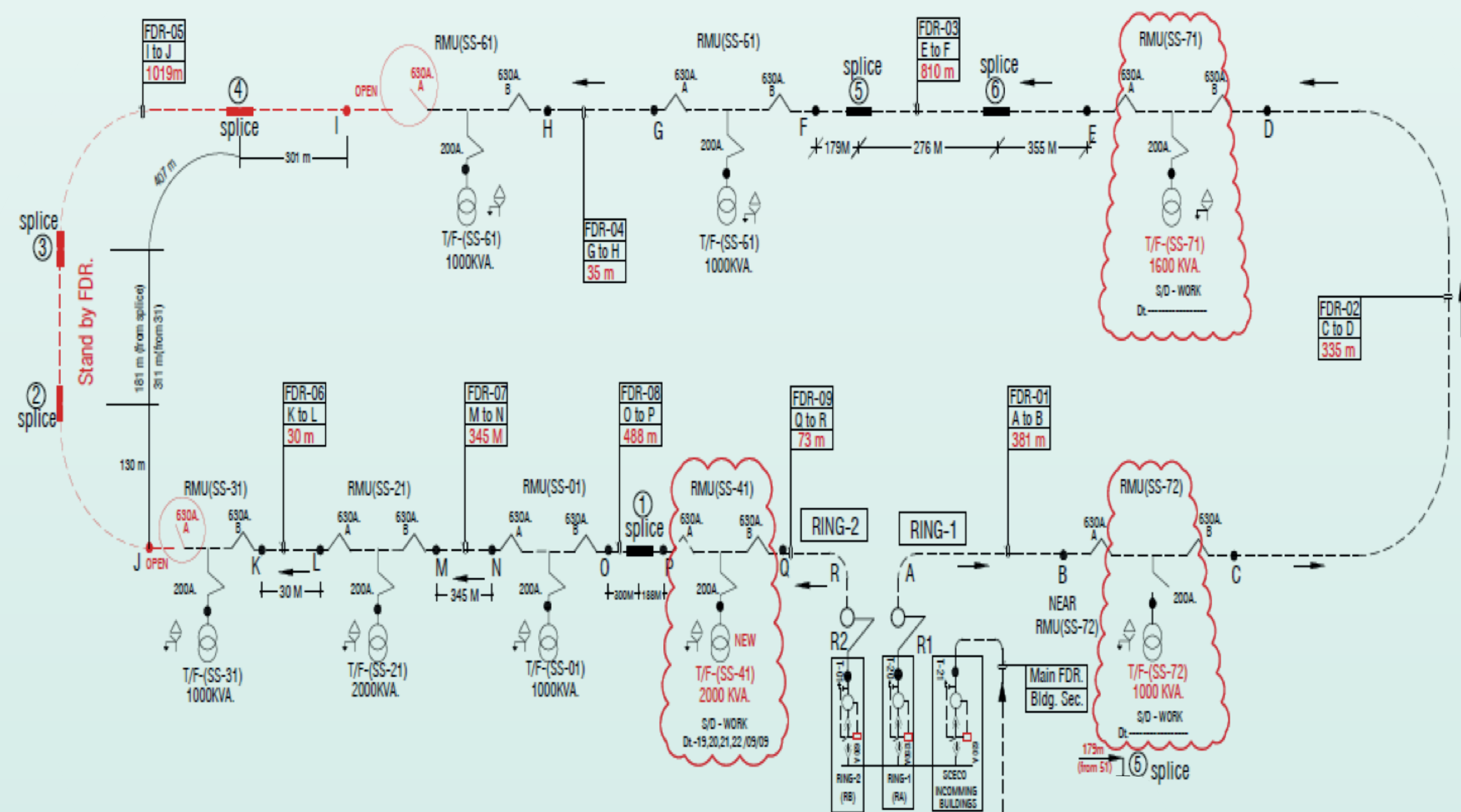
### Objectives

- Familiarize with industry standard software ETAP
- Develop a computer model of PMU's MV/LV electricity distribution system
- Perform a load flow and short circuit of PMU distribution system based on normal condition
- Analyze the result form these studies and make recommendation

### Tools

- ETAP 11.1, Educational Version
- SEC data
- Equipment specifications

### PMU Medium Voltage Network

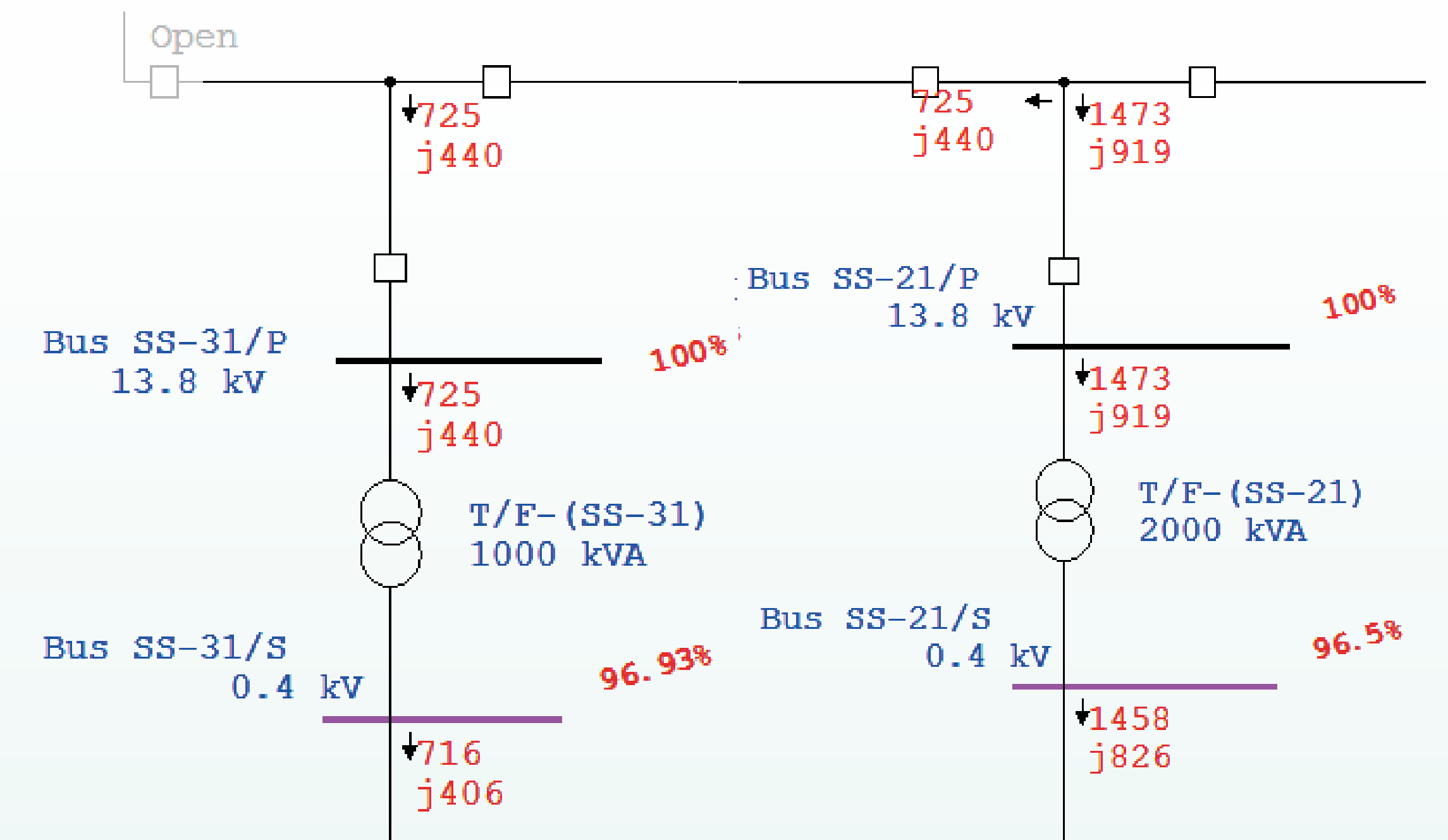


**Team :** Bader Al Muhareb,  
Turki Al Hubail,  
Hisham Al Rasasi  
Spring 2011/2012

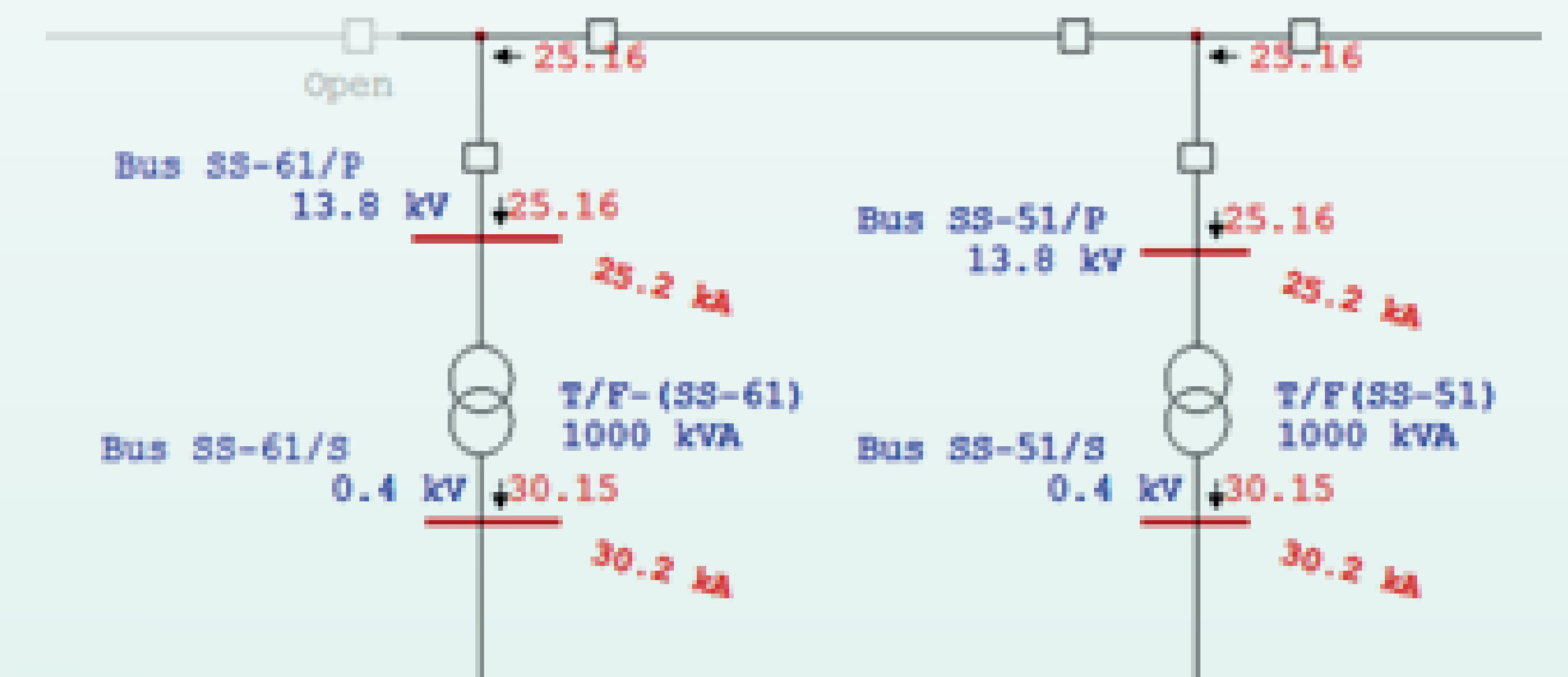
**Supervisor :**  
Dr. Nouredin Harid  
**Examiner**  
Dr. Chedly B. Yahya

### Simulation Model And Result

#### • Load Flow



#### • Short Circuit



### Conclusion

- Result indicate no overload under normal conditions
- Voltage drop in transformer within acceptable limits, near critical ( $\approx 4\%$ )
- Short Circuit current in agreement with SEC data
- Model is valid for conducting the power system
- Limitation due to educational license

### Future Work

- Model can be improved to perform contingency analysis
- More studies can be done under worst case condition
- More studies can be performed such as Motor Starting study, Arc Flash study and Harmonics study