

CHAPTER 5

CONCLUSION AND RECOMMENDATION

Based on the study findings and justifications from other researchers on Artificial Neural Network, it is well-known that by developing the methodology of the neural network in the research, a significant improvement in the process can be achieved. Neural Networks are useful whenever a nonlinear relation between numerical data is sought.

The objective of the ANN model was to forecast the trip of the boiler unit based on the suitable combination of input parameters. Acquired data from the plant, their processing and proper selection of training data are discussed in details. Agreement between the data and NN results is excellent and it is also pointed out the NN is a strong tool for monitoring.

The results of ANN are very sensitive to number of neurons. It might have different result in each run even with fixed number of neurons. Increasing the number of neurons in hidden layer will decrease the number of calculation steps with subsequent decrease in the root mean square error.

The variable “*Low Temp Superheater Right Wall Outlet before Superheater Dryer*” (V20) is assumed to be the main contributor to the shutdown. However, this study only focuses on studying and identifying the behavior of the variables and the ANN modeling instead of confirming the main contributor. For the recommendation for future works, the knowledge gained in developing this set of NN will serve as the ground work for the future development and validation of other artificial intelligence systems to minimize the effect of boiler tube leakage.