CHAPTER - 7

CONCLUSIONS

The prompt detection and isolation of possible contaminants could be a key issue to confirm the standard of life and safety. This thesis introduces a method for analyzing and estimation for Non-Technical Losses, the feeder busses demand information may be detected. Observability analysis for the planned distribution system, regression methods are proposed. The numerical observability approach could also be preferred. The test results have shown that the planned methodology could be an appropriate selection for the distribution system. Moreover, this study applies a planned network for NTL analysis to notice and predict suspicious patterns of abnormal consumption behavior. This thesis concludes that Non-Technical losses estimation could be done using regression analysis tools such as R Square Statistic of Regression, F Statistic of Regression and p-value of Regression analysis and error rates of the zone in the power distribution network can be identified. Results obtained show that the planned network may be used for reliable detection of fraudulent electricity customers. The strategy for fraud detection established to be terribly promising. It provides smart generalization ability for unseen information classification.

7.1 Future Scope

Many utilities have developed meter data management system (MDMS) in the advanced metering infrastructure (AMI). In future, the parameters such as substation peak demand, Voltage rating of power Transformers, the length and size of the conductor, root length of the transmission and distribution line, Power rating of transformers, Various categories of consumers etc., may be gathered from MDMS and could be used, analyzed
with the regression techniques for estimating Non-Technical losses as well as Technical Losses. Statistical methods like ARCH/GARCH Models, Auto regression, State Estimation (SE), Analysis of Variance (ANOVA) could be utilized for real time data processing. ANOVA is useful in NTL anomaly detection. Artificial Neural Network (ANN) concepts may also be deployed for Electrical power distribution system enhancement.