Reliable Electric Power Supply to Jaffna Study on the Jaffna Medium Voltage Network

N. Yoganathan†, A. Ananthasingam, R. Shailajah, S. Arunprasanth, A. Atputharajah and M.A.R.M. Fernando

Department of Electrical and Electronic Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka
†yniro28ee.pdn.ac.lk

Abstract: Energy plays a major role in development of a nation. Therefore, proper studies of energy usage are important for a sustainable development. Especially in Jaffna, the electrical energy consumption increases rapidly during the recent past years. It has been reported that the electricity produced in Jaffna region have (i) low reliability, (ii) large network losses, (iii) high generation cost and (iv) high environmental pollution. Recent research and development has introduced advance technologies up to smart grid concept to make the electrical network smarter, which operates the grids effectively and efficiently. As a post war development in Jaffna, it is important to have proper study and then implement the latest and stable technology, as the best solution for the betterment to the community thus the country. This paper presents the modelling of the existing Jaffna Medium Voltage (MV) network. This study has resulted few over loaded transformers in the MV network. Therefore, if the network remains same and with the rapid increase in demand, this will leads many places with under voltage or over loading problems. Further properly modelled study will help to implement automated network concept, which can efficiently operate the network with high reliability, good power quality and low losses.

Keywords: Energy, Medium Voltage, Voltage violation and Jaffna Electric Power Network