Engineering and Technology Journal Vol. 36, Part A, No. 3, 2018
DOI: http://dx.doi.org/10.30684/etj.36.3A.9

Thamir M. Abdul-Wahhab
Electrical Eng. Dep., University of Technology, Baghdad, Iraq
thamir62@yahoo.com

Riyadh A. Ahmed
Computer Center, University of Baghdad, Baghdad, Iraq
rd_iraq@yahoo.com

Received on: 17/10/2016
Accepted on: 27/04/2017

Reliability Evaluation of Al_Mansour 11kV Distribution Network in Baghdad City

Abstract- *Reliability is a key aspect of power system design and planning. This work aims to evaluate and improve the reliability of a power distribution network in Baghdad city. The minimal cut set method has been adopted for reliability evaluation. Evaluating the reliability requires calculating and evaluating a set of reliability indices. In this research, the reliability indices are calculated for Al_Mansour 11kV distribution network in Baghdad city. According to these indices several improvements have been proposed and simulated on the network as follows:*

- *Adding N/C manually switches in the network for isolating fault area and restoring the service to the remaining parts.*
- *Adding N/O manually switches to interconnect feeders and provide alternative supply.*
- *Replacing the manually switches by remotely controlled or fully automated switches with fault indicators to reduce interruption times.*
- *Replacing the overhead lines by underground cables to reduce the fault rates. The software CYMDIST version 7.1 has been used as a tool for the simulation of the distribution network and performing the required analysis.*

Keywords- *Reliability, minimal cut_set method, power system, distribution network, CYMDIST software.*

How to cite this article: T.M. Abdul-Wahhab and R.A. Ahmed, "Reliability Evaluation of Al_Mansour 11kV Distribution Network in Baghdad City," *Engineering and Technology Journal*, Vol. 36, Part A, No. 3, pp. 304-314, 2018.

Copyright © 2018by UOT, IRAQ