Comparative Load Flow Analysis of Overhead and Underground Cable System on Baidam Feeder

***Abstract*—**Distribution of electric power is the final stage to deliver electric power to end users. It carries required voltage level of electric power from the distribution substation to individual consumers. Baidam feeder from Kudhar substation, Pokhara Nepal, is 11 kV domestic and commercial feeders which is of straight run length of 9.07 km consisting of 77 distribution transformers. Load flow analysis of this feeder is performed in Electric Transient Analyzer Program (ETAP) software. After replacement of overhead line by underground cable beyond Jarebar in Lakeside area active power loss, reactive power loss and voltage drop is reduced by 71.6 kW, 68.5 kvar and 2.79% respectively. Reliability assessment of underground system shows decrease in System Average Interruption Frequency Index (SAIFI) and increase in System Average Interruption Duration Index (SAIDI). The peak load of the feeder is forecasted to be double in fiscal year 2088/89.

Keywords— Distribution system, Feeder, Load flow, Reliability indices, Load Forecast