

Chapter - 6

Conclusion and recommendations

6.1 Conclusion

Almost all simulations carried out without arrester protection (Step-1) shows that the TOP phase of each circuit has a lower back flashover minimum current value compared to the rest of the phases. Therefore it can be concluded that the TOP phases of each circuit are more likely to have back flashovers compared to the rest of the phases.

As per the results given for the simulations, carried out with single arrester installed in TOP phase of circuit-02 (Step-2) gives no protection for the TOP phase of the other circuit beyond 50kA surges. However all phases of the circuit-02 is protected up to 200kA except the MIDDLE phase which is only up to 180kA.

According to the results of the simulations carried out with two (02) arrester configuration, it is observed that the protection against back flashovers is provided only for the tower installed with two (02) arresters at its TOP phases. Further it is noted that the adjacent side towers are not protected against back flashovers by the arresters installed on the tower at the middle. Therefore each tower needs to be protected individually.

6.2 Recommendations

According to the conclusions described in the previous section, initially it can be recommended to install 02nos. of Transmission Line Arresters (TLAs) each on TOP phases of each tower from tower no.33 to 50 and tower no.85-95 where the most insulator damages are recorded.

The selection and matching of mechanical characteristics of Transmission Line Arresters to the system characteristics and maintenance requirements has to be done to complete the full selection procedure as described in the section 3.4.