

## **Lightning study and experience on the first 500kV transmission line arrester in Malaysia**

### **ABSTRACT**

Being in one of the highest region of lightning is truly a big challenge to the utilities operating transmission and distribution lines where lightning related cause of tripping has become the major concern every year. Tenaga Nasional Berhad (TNB) in Malaysia is one of those utilities facing the huge challenge in ensuring the line performance is maintained so as to conform to the National Grid requirement. In 2011, the management has addressed their major concern which was the line outages due to lightning on 500kV lines. This is an extraordinary case as commonly lightning caused tripping normally affects lower voltages with lesser insulation. Extensive studies were conducted on several selected 500kV lines and solutions were being proposed in the studies. Besides technical evaluation using software simulation and historical analysis, cost effect in applying possible solutions were also studied. This is to ensure that the best line performance will be achieved with the most cost effective solution to the company.

**Keyword:** Insulation coordination for transmission line; Transmission line performance