

Investigation on the 132kV overhead lines lightning-related flashovers in Malaysia

ABSTRACT

The Transmission Division of Tenaga Nasional Berhad (TNB) manages and operates transmission system ranges from 66kV up to 500kV in Peninsular Malaysia. Being in tropical country with high keraunic level, system outages due to lightning strikes has become major issue each year. This paper present the findings of an investigation on a series of lightning-related flashovers which occurs on the 132kV Kuala Krai (KKRJ) to Gua Musang (GMSG) line in Malaysia. Lightning activities were recorded by Lightning Detection System (LDS) during the flashover occurrence and it was analyzed. Possible cause of failures which are related to Transmission Line Arrester (TLA) installation and Tower Footing Resistance (TFR) were explained to conclude the multiple numbers of tripouts on the line. Suggestions to increase the performance of the line are also discussed.

Keyword: Lightning flashover; Line performance; Overhead line (OHL); Tower footing resistance (TFR); Transient; Transmission line arrester (TLA)