Continuous monitoring on 132kV line in reducing flashovers due to lightning

ABSTRACT

The Transmission Division of Tenaga Nasional Berhad (TNB), Malaysia manages and operates the 132kV, 275kV and 500kV transmission systems that form an integrated network known as the National Grid. TNB's National Grid system spans the whole of Peninsular Malaysia that represents the backbone of the electricity industry and the Transmission Division is responsible for the safe, adequate, reliable and economical operation of the grid system in conformance to the Malaysian Grid Code. Malaysia, being in the high region of lightning has caused the transmission lines to be exposed to severe lightning activities each year, thus being the main reason for overhead lines tripping each year. This includes the 132kV Kuala Krai to Gua Musang Line which is located in the North- East of Peninsular Malaysia. In 2012, the Engineering Department of TNB Transmission was given the task to study the line performance. The main task is to explain the 'un- effectiveness' of the installed Transmission Line Arrester (TLA) on the line since 2007. The line was installed with more than 120 units of TLA since 2007 until 2012. Theoretically, with increasing number of installed TLA will reduce the number of flashover on the line. However for this line, with increasing number of installed TLA, the flashover rate was recorded to be increased. The findings of the study will be presented in this paper. Furthermore, the continuous monitoring of the line will be presented together with the latest trip data for the line.

Keyword: Overhead lines performance; Transmission line arrester