Abstract

Conversion of existing high voltage long AC transmission line into combined AC-DC system can bring the benefit of stability improvement. Of late, most of the developments in stability analysis are simulation based. Sometimes it is difficult to draw a generalized conclusion through simulation result. In this case, an analytical model can be a perfect tool to analyze the fault and get concrete decision about the future planning. This paper presents a stability model for the analysis of all types of fault. Primarily, the stability model is established for the fault at the transmission line and then introducing simple logical modification it can be applicable for the development of analytical models of all kinds of faults, such as; Fault at the load terminal, sustained fault at the line, fault very close to the generator bus. To expose the efficacy of the developed stability model two different ways of validation process is followed and optimistic results are found.