

In conventional transmission line protection, a distance relay is used to provide the primary as well as remote backup protection. The voltage and current phasors measurement needed by the distance relay for determining the impedance may be affected by the power disturbances such as power swing. Consequently, this power swing may cause mal-operation of Zone three distance relays which in turn may affect on the reliability of the whole protective scheme. To mitigate these effects and hence improve the relay reliability, this work proposes a new real-time power swing detector using phasor measurement units for blinding the distance relay only during this transient disturbance. However, this developed detector will not block relay when the power swing accompanied with faults. To validate the present work, the performance of developed enhanced distance relay is tested by signals generated by Simulink/MATLAB simulator under different conditions. The test results show that this proposed scheme provides good discrimination between the transient currents and the fault current which in turn it may contribute in enhancing the reliability of Distance relay