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Topic of Research: **Fault Diagnosis and Protection of Transmission System Using Soft Computing Techniques**

Finding

Summary of abstract (200 words)

The power transmission system being geographically scattered and exposed to the atmosphere, the likelihood of fault occurrence and the uncertainty in fault events on the transmission system is higher than that of other power system components. As the faults impair the performance of a power transmission, and have the direct impact on the power flow and the power quality. Therefore, to restore and maintain the power quality supply and to improve the transient stability of the power system, prompt fault detection and the accurate fault classification is needed to achieve high reliability and selectivity for the satisfactory operation of protection relays. Keeping in view of ambiguity and uncertainty of fault events intelligent techniques like soft computing is implemented. This thesis presents the fault categorization and classification of multi-terminal, IEEE 3 machine nine bus systems (3MNBS) considering the various fault operating attributes like fault locations, fault point resistance, fault distance, fault inception angle and considering the various zones and simultaneous fault cases with different techniques to overcome the limitations of the existing methods. In the previous research none has discussed about the fault classification and detection of multi terminal 3MNBS system considering zones and simultaneous fault at a time in different locations. In this thesis author has taken all the three phase fault voltage and current as input variables and fault types as output. Author tried to classify the types of fault and checked the accuracy of fault type considering above features.