

## ADAPTIVE RELAY SETTING FOR FLEXIBLE AC TRANSMISSION SYSTEMS (FACTS)

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**Abstract-** The paper presents an apparent impedance calculation procedure for distance relaying of transmission line involving FACTS devices, particularly the UPFC (Unified power flow controller). The presence of UPFC significantly affects the trip boundaries which are also adversely affected by fault resistance combined with remote end infeed. Depending on the UPFC location, the trip boundary is influenced by the fault location, prefault condition, the arc fault resistance and the parameters of the UPFC itself (series voltage magnitude and phase angle). The adaptive nature of this protection scheme necessitates the use of a neural network for generation of trip boundaries.