

# **Improve the relay performance of the distances In the protection of long lines With compensation for delay By telecommunication**

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**By paying attention to increasing of using electrical energy and loads day to day, in addition capacity network and also dependability of social power network is so important on the other hand safeguarding of systems against faults and power swing effect on stability of network, because if the safeguarding system doesn't have enough security and confidence c, it might be feeble thought little errors and it causes that the whole or a part of network be out of use. Because the main safeguarding of most convection of power lines have be done by distance consideration of working of in different situation of systems is so useful. This thesis proceeds on problems of relay in safeguarding of because in our country, three terminal lines transfer lines Forms and T-off have used a lot and on the other hand safeguarding of convection lines is done by distance method , proceed on may of distance safeguarding in safeguarding of three terminal lines. There are a lot of problems in the simple way of safeguarding distance of three terminal lines, that these problems happens by the reasons such as intense effect of infeed (middle current) and error resistance,... these problems can be decreased by ways and logical like POTT and PUTT but these ways will be out of use with the changing that happens in conditions of system. In this thesis the revenue operation of distance relay of 3 lines has been studying in different conditions. By different conditions that happens in consideration for power system, all the conditions have been taken into consideration and at the 3new safeguarding logical have been offered for covering the problems of distance safeguarding way, all the offered ways have functions that have been used in industrial distance relay**

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