

## **Developing an Algorithm and Program (ASPR) for adaptive Setting of Protection Relay for Tracking of Network Parameters Changes Effects on Distance Protection Settings<sup>1</sup>**

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### **Abstract**

Protection Systems relays have been developed in their principles and performance, and it becomes easy to overcome difficulties of old generations of relays, especially those belong to setting changes of distance protection relays with the change of network architecture (due to faults or any other reasons) that should be protected by appropriate distance .

We concentrate on changes of source impedance and far end contribution current supplying the fault.

Through our research we developed an algorithm and program system we named ASPR(Adaptive System for Protection Relays)tracking effects of emergency faults on distance protection relays settings by comparing normal working condition settings and emergency case condition.

The program system ASPR emulates alarm messages so the operator has to change setting group of the distance relay to new one previously stored in the relay.

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**Keywords:** Distance Protection, Selectivity, Adaptive Protection, Protection Zones, Circuit Breaker, Bus-Bar, Settings Groups.

<sup>1</sup> For the paper in Arabic see pages (157-171).

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