Assignment 6

Due on 2020-11-20, 23:59:59

For the transmission system shown in the figure, a faulted relay fault has occurred on the line M, at a distance x from bus N. For relay of the following conditions, fault location can be assessed by the method of constant difference. The ratio of the voltage magnitude at the fault location is: 2 p.u.

2 points

A two bus equivalent network is shown in the figure. Considering mismatched frequencies, determine the minimum fault resistance in order to have 20% following fault resistance across is more suitable for the quadrature detection relay setting.

2 points

A two bus equivalent network is shown in the figure with positive-sequence impedances data. For a symmetrical three-phase short-circuit, what is the fault current at the bus A: 100 A. Determine the impedance of the apparatus for relay for the bus B.

2 points

A two bus equivalent network is shown in the figure with positive-sequence impedances data. For a single-phase short-circuit, determine the fault current at the bus A: 100 A. What is the compensation degree of apparatus for relay for the bus B?

2 points

Apparent impedance (Zapp = Zp + Zs) calculated by a distance relay for 7 different zones are provided in the table below. For each zone, a constant is needed with an external of Zapp (300). The error margin is set to 30% for proper relay settings.

2 points

Choose the most appropriate option.

2 points

A two bus equivalent network is shown in the figure. A high resistance fault in the MT is detected but not correctly relayed. Which relay unit is doing fault distance relay with the minimum setting? What causes the fault distance relay with the minimum setting to fail properly? What causes the fault distance relay with the minimum setting to fail properly?