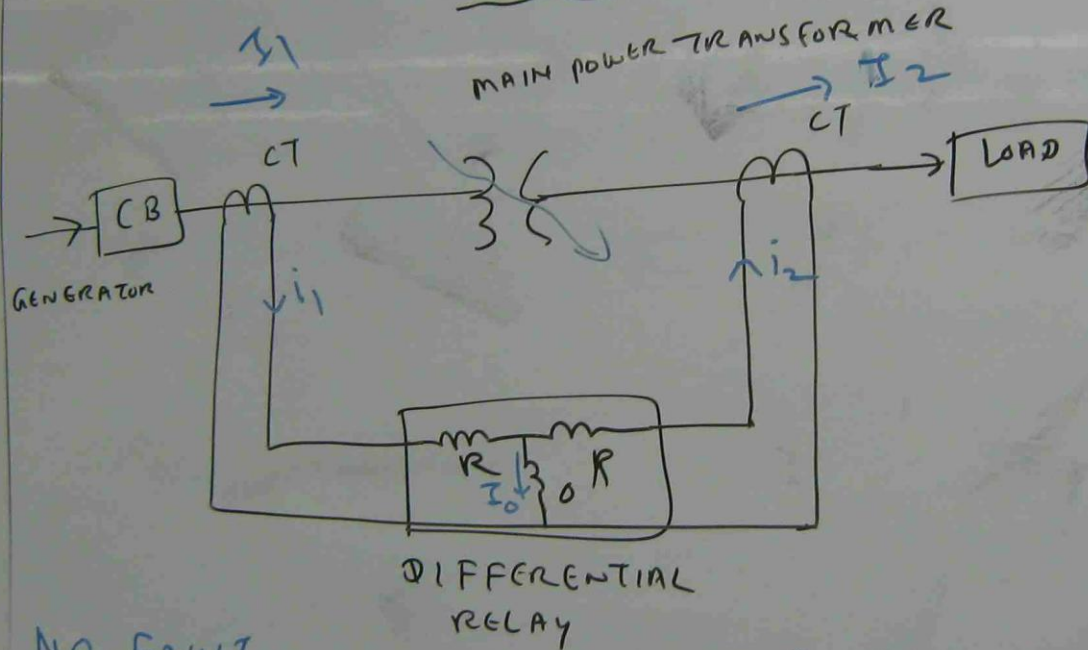


ELECTRICAL PROTECTION IS PROVIDED BY DIFFERENTIAL RELAY

CONNECTION OF DIFFERENTIAL RELAY



NO FAULT

$$I_1 = I_2$$

$$I_1 = I_2 \quad I_0 = 0$$

FAULT

$$I_1 \neq I_2$$

R - RESTRAINING COIL

O - OPERATING COIL

## OPERATION PRINCIPLE OF DIFFERENTIAL RELAY

AT NORMAL CONDITION, THE CT PRIMARY CURRENT  $I_1$  FLOWING IN TO TRANSFORMER AND  $I_2$  FLOWING OUT FROM THE TRANSFORMER ARE EQUAL.

CT - SECONDARY CURRENT  $i_1$  AND  $i_2$  FLOWING IN TO DIFFERENTIAL RELAY ARE ALSO EQUAL.

NO RESULTANT CURRENT FLOWS IN TO RELAY OPERATING COIL. ONLY THE CURRENTS FLOW IN TO RELAY RESTRAINING COIL.

RELAY OPERATING COIL IS NOT ENERGIZED AND THE RELAY DOES NOT OPERATE

WHEN THE FAULT OCCURS IN MAIN TRANSFORMER,

$$I_1 \neq I_2 \quad \text{AND} \quad i_1 \neq i_2$$

THE RESULTANT CURRENT  $I_0$  FLOWS IN RELAY OPERATING COIL.

RELAY OPERATES.

