EXPERT SYSTEMS AND SOLUTIONS
48, North Street, Aranarai, Perambalur, Tamil Nadu, India.
Email ID: expertsyssol@yahoo.com,
Website: www.researchprojects.info
Phone: 9952749533,

Design of Protection system based on post fault conditions obtained using symmetrical components method.

Modern power systems operate close to their security limits and require high-speed fault clearing to preserve transient stability, reduce fault damage, minimize outage duration, and improve power quality. To provide high speed tripping for faults occurring at any point on a transmission line, there must be some form of accurate protective relays which operate on the basis of post fault values.

Power systems are subjected to a wide range of small or larger disturbances during operating conditions. Small changes in loading conditions occur continually. The power system must adjust o these changing conditions and continue to operate satisfactorily and within the desired bounds of voltage and frequency. The power system should be designed to survive larger types of disturbances, such as faults, loss of a large generator, or line switching. Certain system disturbances may cause loss of synchronism between a generator and the rest of the utility system, or between interconnected power systems of neighboring utilities. If such a loss of synchronism occurs, it is imperative that the generator or system areas operating asynchronously are separated immediately to avoid widespread outages and equipment damage

A false trip of a distribution bus can cause outages to a large number of customers as numerous feeders and/or sub transmission lines may get disconnected. A false trip of a transmission bus bar may drastically change system topology and jeopardize power system stability. Hence, the requirement of a maximum security of busbar protection. On the other hand, bus faults generate large fault currents. If not cleared promptly, they endanger the entire substation due to both dynamic forces and thermal effects. Hence, the requirement of high-speed operation of busbar protection.

In this project per we describe the philosophy and design fundamentals of protection in a transmission system using the symmetrical component approach. The symmetrical components method is a technique that allows unbalanced phase quantities such as currents and voltages to be represented by balanced components.

EXPERT SYSTEMS AND SOLUTIONS

48, North Street, Aranarai, Perambalur, Tamil Nadu, India.
Email ID: expertsyssol@yahoo.com,
Website: www.researchprojects.info
Phone: 9952749533,

Design of Protection system based on post fault conditions obtained using symmetrical components method.

Modern power systems operate close to their security limits and require high-speed fault clearing to preserve transient stability, reduce fault damage, minimize outage duration, and improve power quality. To provide high speed tripping for faults occurring at any point on a transmission line, there must be some form of accurate protective relays
which operate on the basis of post fault values.

Power systems are subjected to a wide range of small or larger disturbances during operating conditions. Small changes in loading conditions occur continually. The power system must adjust o these changing conditions and continue to operate satisfactorily and within the desired bounds of voltage and frequency. The power system should be designed to survive larger types of disturbances, such as faults, loss of a large generator,
or line switching. Certain system disturbances may cause loss of synchronism between a
generator and the rest of the utility system, or between interconnected power systems of neighboring utilities. If such a loss of synchronism occurs, it is imperative that the generator or system areas operating asynchronously are separated immediately to avoid widespread outages and equipment damage

A false trip of a distribution bus can cause outages to a large number of customers as numerous feeders and/or sub transmission lines may get disconnected. A false trip of a transmission bus bar may drastically change system topology and jeopardize power system stability. Hence, the requirement of a maximum security of busbar protection. On the other hand, bus faults generate large fault currents. If not cleared promptly, they endanger the entire substation due to both dynamic forces and thermal effects. Hence, the requirement of high-speed operation of busbar protection.

In this project per we describe the philosophy and design fundamentals of protection in a transmission system using the symmetrical component approach. The symmetrical components method is a technique that allows unbalanced phase quantities such as currents and voltages to be represented by balanced components.