

Recapture Scheme for Fault Power through Grounding

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ABSTRACT

This paper focuses on recapturing short circuit power (or) fault power by means of a retrieval scheme through grounding. Considering any day today applications wastage of power is a routine activity, similarly for a fault protection we use grounding methodology and techniques for safeguarding the humans and equipment. But when taking this into consideration these fault power is wasted without any purpose or applications. Hence for effective utilization of this fault power the above project has been proposed. The main aim of this proposed project is, when this method is implemented in the power system, it would certainly help to save fault power.

OBJECTIVE

The main objective of this project is that when we are trying to establish a new project in power system, the aim is focused on "HOW TO SAVE MAXIMUM POWER". Mainly we can collect this power from high short circuit occurring places rather than generating on the time of demand.

Consider on the operation of inverters, in which at that instance we can collect the grounding power for purposeful needs. Not only considering technically but seeing into the practical side, both commercial as well as domestic applications, we can use this system to save the fault power via grounding techniques.

Thus by implementing this method not only saving power but also profit quote can be increased and losses can be reduced.

INTRODUCTION

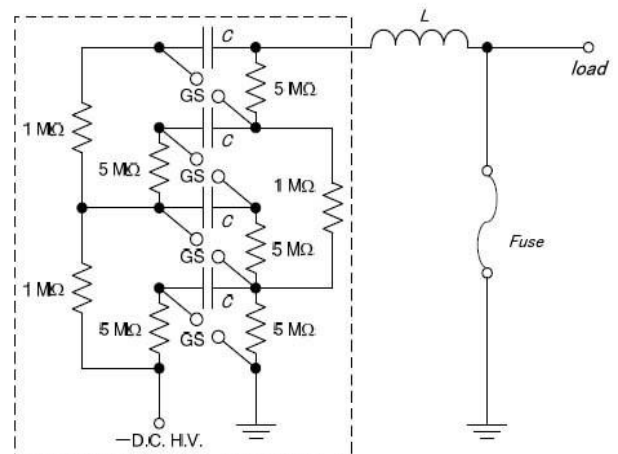
On considering the earlier to till date about power system we all have heard about safeguarding the equipment's ie. men and material from dangerous occurrence of electricity. This fault power is grounded to prevent the unwanted occurrence or situations, but when you look into it closer, "What about the grounded power?"; it's of no use. Thus for bringing a new cause or a revolutionary change in this methodology we have proposed this project concept of recapturing the fault power via grounding by "PGC (Power Grasping Circuit)" method.

PROPOSED CONCEPT

A PGC (Power Grasping Circuit) is an electrical circuit consisting of capacitors, resistors, and spark gaps arranged in a ladder structure capable of producing high voltage impulses (which result in sparks) by first charging the capacitors in parallel and then discharging them in series.

To ensure that recovering a short circuit current only in DC/AC supply means, we use PGC.

When the first gap breaks down, pure electrostatic theory predicts that the voltage across all stages rises.



OPERATION

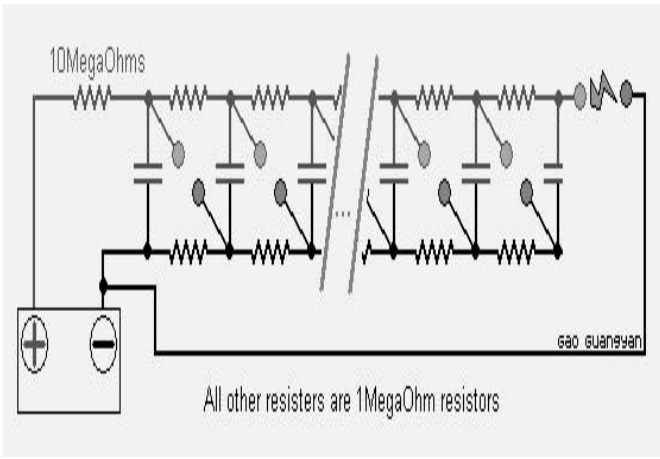
When the fault power arises in a system it will be taken through (or) passed on to the ground from which it is redirected to the PGC consisting of capacitors arranged in parallel fashion. The occurred power will be a sudden dropped power hence to hold this, it is directed to the capacitors provided in PGC and will get charged. On the charging time the arrangement of capacitor is in parallel connection, but when this sudden power flows on to the circuit it will get shifted to series combination.

This above method makes the fault power to get hold in the circuit itself.

After the charging period then the gets discharged via spark gaps to the next capacitor provided. Much number of capacitors & spark gaps likewise will be arranged in the combination of PGC which is mentioned in the circuit diagram.

develop a methodology to save maximum electricity in accordance with demands existing .

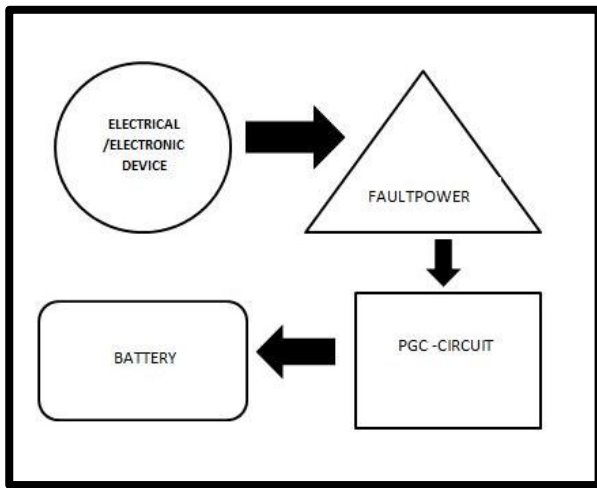
CIRCUIT DIAGRAM-PGC



REFERENCES

- IEEE Std 81-1983, "IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System," Institute of Electrical and Electronic Engineers, pp12-24, 1983.
- The Basics Grounding Systems-Electrical Construction and Maintenance-Jedson Engineering.Inc
- Grounding of Workstation -EOS/ESD Technology- Feb/March-1989.

OVERALL WORKING-BLOCK DIAGRAM



Hence looking into the overall process taking place, we can understand that the fault power from any electrical or electronic device gets grounded which is then fed to the PGC from which the power gets stayed via the arrangement of capacitors and finally goes to the battery for saving.

CONCLUSION

Thus we are concluding our conceptual idea of research and development with this paper and on taking reference in it; it can be a contrives in the law of electricity existing today but in mere future it may create a revolutionary change to minimise the loss and can