Abstract

The term power quality becomes one of the touching concepts in present day economy. Due to its increased concern in the emerging industries, the importance of delivering true power is of a key issue. The concept of true power mainly depends on how correctly the issues like voltage sag and voltage swell are mitigated. Among all the power quality problems, the above mentioned are of key importance. This is because of the extensive use of newly invented as well as the outdated sensitive equipments connected to the load. Sensitivity is the main cause of the above power quality problems and it cannot be eliminated completely as it has many other operating properties. So the next possible solution is to correct the problems caused by the sensitive equipments connected to the faulty loads. The occurrence of sag and swell varies with equipment, environment, process operations, desired control schemes etc. by referring IEEE standards, the power quality events will last only for small instants. Thus the real time detection becomes a really tough task and even a small instant variation will cause a series of problems to the process industry. The dynamic voltage restorer is a special type of power device used for providing consistent and reliable supply power to the load devices. Dynamic voltage restorer uses a vector control strategy for mitigating power quality problems by
automatically detecting and injecting the voltage components through an injection transformer. Repeated occurrence of sag and swell will cause these equipments to malfunction. Here comes the importance of soft computing techniques like fuzzy logic. With the help of a newly developed fuzzy rule base, the system will be able to correct repeated occurrences of the power quality problems.

References

- C. S. Lam, M. C. Wong and Y. D. Han, "Voltage swell and overvoltage..."

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Computer Science
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Voltage Sag  Voltage Swell  Dynamic Voltage Restorer  Power Quality  Fuzzy Logic Controller