

Improvement Of Power Excellence In Sharing Scheme Using Distribution Static Compensator

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Abstract: Enhanced power sag, harmonic distortion and low power object using a static distribution compensator (D-STATCOM) has a passive LCL filter in the phase system. The mode is based on the voltage source transformer core (VSC). D-STATCOM introduces current system to stabilize electrical sag. Then a negative LLC filter was added to D-STATCOM to correct harmonics and low power factor. The music was performed with MATLAB SIMULINK. D-STATCOM (Static Distribution Compensator), shown professionally in the figure, contains a two-segment voltage source transformer (VSC), a DC power storage device, and a coupling transformer connected in the switch to the distribution network via a coupling transformer. IVSC converts a DC crossover storage device to create a range of three phase AC voltages. These voltages are in phase and connected to the AC system through a plug-in transformer experiment. Adequate adjustment of D-STATCOM's phase and output voltages allow for effective control of the active and efficient electrical exchange between D-STATCOM and AC system. This adjustment allows the device to inject or eject an active and efficient control panel.

Keywords: DSTATCOM; FLC; VSC; FACTS; Total Harmonic Distortions;

INTRODUCTION

Increased demand for high-quality, reliable electrical power and an increase in the number of defective loads can increase the awareness of electrical power by consumers and similar applications. The most common problems of the electric field today are power outages, hormonal imbalances, and power outages. A power outage is a short event (10 ms to 1 minute) during which a decrease in electrical activity occurs [1]. It is usually set by two parameters, depth / volume and length. The magnitude of the air drops from 10% to 90% of the total voltage and length from half the rotation to one minute. Low voltage is caused by a failure in the operating system, a breakdown within the customer area or a significant increase in load current, such as a car start or transformer activation. Low voltage is one of the most common problems of the electric field. For the electronics industry, it happens more often and causes more serious problems and economic losses. Utilities often view interference from end-user technology as the most common electrical type issue. Harmonic waves in the dispersion system can cause harm to the hydarmonic, lower the power factor and by increasing the loss as well as the heat in the electrical equipment. It can also cause vibrations and noise in machinery and incorrect equipment. Improvements in electronic devices such as Flexible Alternating Current Transmission System (FACTS) and traditional electronic devices have brought the emerging branch of technology that equips the electronic system with new control technologies. There are a variety of ways to improve energy efficiency in reducing and depleting systems [2]. Among these products,

DSTATCOM is one of the most effective. The new PWM based control scheme for the electronic control valve was developed in DSTATCOM. DSTATCOM has the ability to increase the potential of current operating under voltage, and can be upgraded as an electrical and frequency support by replacing capacitors and batteries as energy saving.

RELATED STUDY

A voltage socket converts the power supply to a device connected in a shunt or similar system. It can produce sinusoidal voltage in any size, frequency and required section angle. VSC was used for full voltage replacement or "no electricity" injection. He - the absence of electricity is the difference between the two names electrical and real. It also converts the DC voltage on the air conditioning equipment to make a group of three AC output voltages. Again, D-STATCOM is also capable of either generating or absorbing energy. If the output voltage of the VSC is greater than the terminal voltage of the AC bus, then the D-STATCOM is said to be in capacitive mode [3] [4]. Thus, it will charge the operating power through the AC system and control the lost voltages. These voltages are partial and connected to the AC system through a standard coupling transformer. Adequate adjustment of component and output voltages of DSTATCOM allows for effective control of the active and efficient electrical exchange between D-STATCOM and AC system. Again, the transformer usually relies on some kind of electrical storage, which will provide the transformer with DC voltage. A balanced control system is a type of rhythmic response control system. The balance

mixing control (PI) holds the plant to be compensated for by the measured error rate (the difference between the actual output and the desired set point) and the value of the value [5]. The advantage of balanced and balanced control is that time mixing causes - ground fault is zero to operate. Fuzzy Logic Controller (FLC) is used as the leader in the selected mode. It provides simple computer interaction which is essential to computer and audio concept. Provides technical stability and details information. The obscure theory provides a way to represent structures of language such as “plural”, “ground”, “middle”, “often”, “secondary”. Designed to control the work of the inverter. FLC is a new addition to control theory and includes a stupid IF X constant rule and your own ZZ method for solving the control problem instead of trying to simulate a DC coin sports sauce connected to a DC capacitor. This DC capacitor can be charged with a battery charger or can be replaced with an automatic transmitter [6].

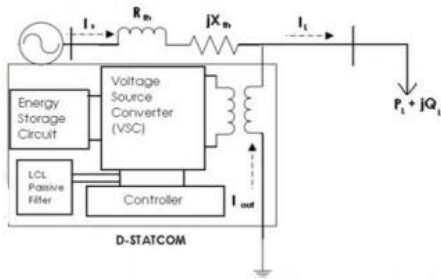


Fig 1: Schematic Representation of D-STATCOM

AN OVERVIEW OF PROPOSED SYSTEM

The PI Controller is the controller that drives the system to be monitored by the weight of the error signal (the difference between output and desired set point) and the value of the value. In this case, the PI controller will hold the error signal at zero.

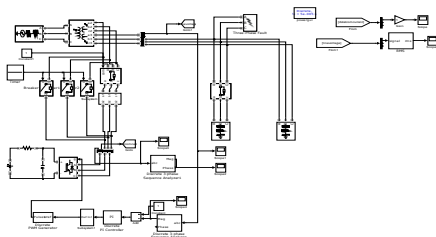


Fig.3.1. DSTATCOM_DS_PI Controller.

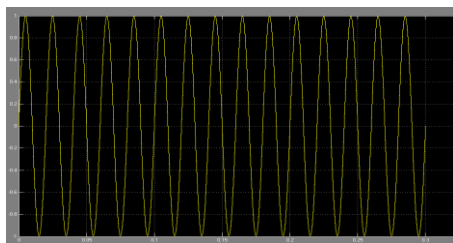


Fig.3.2. DSTATCOM Current

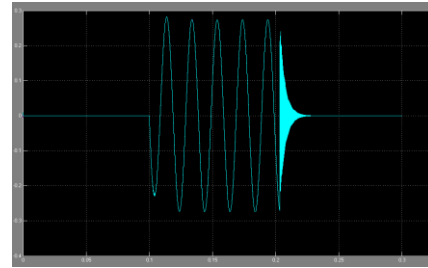


Fig.3.3. DLG Fault

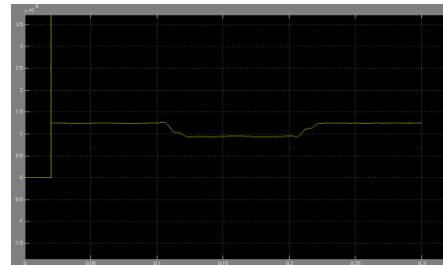


Fig.3.4. DLG Fault

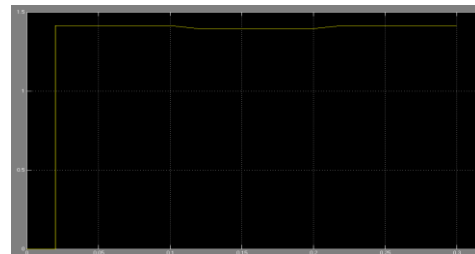


Fig.3.5. TPG Fault

CONCLUSION

This results show that electronic bags can be reduced by installing D-STATCOM on the dispensing system. The comparison used in MATLAB shows that with the fog controller, the performance of DSTSATCOM is more satisfactory than that of the PI manager. By adding an LCL pass filter to D-STATCOM, the % THD was also reduced within IEEE STD 519-1992. Thus, it can be concluded that by adding D-STATCOM filter and LCL the power supply is improved and Fuzzy Controller is more efficient than PI Controller.

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