Abstract

This paper investigates the enhancement in voltage stability margin as well as the improvement in the power transfer capability in a power system with the incorporation of Fixed Capacitors, Static Synchronous Compensator (STATCOM) and Static VAR Compensator (SVC). A simple transmission line system is modeled in MATLAB/SIMULINK environment. The load flow results are first obtained for an uncompensated system, and the voltage and real and reactive power profiles are studied. The results so obtained are compared with the results obtained after compensating the system using Fixed Capacitors, SVC and STATCOM to show the voltage stability margin enhancement. The results obtained after simulation demonstrate the performances of shunt capacitor, SVC and STATCOM when connected to a system on the verge of unstability. All the simulations for the above work have been carried out using MATLAB (SIMULINK) software.

References

- CIGRE, "FACTS Overview", IEEE Power Engineering Society, 95 TP 108,
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Index Terms

Computer Science  Power Systems

Keywords

Voltage Stability  Svc  Statcom  Fixed Capacitor  Facts  Active Power  Reactive Power.