Abstract

Efficient load models are essential and important for power system load modeling constraint voltage stability studies. Dynamic load models allow a more precise calculation of stability limits that are critical in the planning and operation of power systems. Voltage stability which defines ability of a power network to maintain steady voltages deals with many a kind of disturbance parameters. Variation in loads is considered one such category of disturbance which may result to instability. In this paper, we are trying to analyze modeling parameters of loads for voltage stability studies. We are performing a dynamic load modeling study. The accuracy and correctness of the results are directly related to the load models used in this analysis. The method is analyzed using continuation power flow routine. FACTS technology with a combination of Cat Swarm Optimization heuristic approach is applied to give a solution for the problem of instability. The effectiveness of the proposed method is demonstrated through quantitative studies on standard IEEE 6 bus and 14 bus networks.

References

Dynamic Load Models for Voltage Stability Studies with a Solution of UPFC using CSO

- Shu-Chuan Chu, Pei-Wei Tsai and Jeng-Shyang Pan, “Cat Swarm Optimization”, 9th Pacific Rim International Conference on Artificial Intelligence, LNAI 4099, pages 854-858, 2006.

Index Terms

Computer Science
Applied Science
Keywords

Continuation Power Flow  Cat Swarm Optimization  Load Model  Unified Power Flow Controller  Voltage Stability.