Name- Jyoti Iyer  
Enrollment No. 139997109003  
Branch- Electrical Engineering  
Title of Thesis- Voltage Stability Analysis in Power Systems

Abstract

- To carry out voltage stability analysis of a power system by finding the proximity of the system to voltage collapse.
- Voltage Collapse Proximity indicators have been found and their performances have been analyzed for active and reactive load changes for IEEE 14 bus system.
- The continuation power flow (CPF) method which aids in finding the loading margins and maximum load ability has been implemented on a two bus system.
- The contour evaluation program gives the global response of a power system for variations in the node constraints. It has been applied to a two bus system and IEEE 14 bus system for finding relationships between any two node variables with different constraints.
- The Artificial Neural Network (ANN) method is proposed for online voltage stability assessment for IEEE 14 bus system with novel input-output combination.
- The efficiency and speed of the ANN has been improved by reducing the input data dimension by application of Principal Component Analysis (PCA) method for the IEEE 14 bus and IEEE 30 bus system.
- Events which produce a similar impact on the power system from voltage stability point of view have been identified. This thesis would be useful for conducting voltage stability analysis of a power system.

List of Publications

