

A novel implementation for generator rotor angle stability prediction using an adaptive artificial neural network application for dynamic security assessment

ABSTRACT

This paper addresses a new approach for predicting the generator rotor angle using an adaptive artificial neural network (AANN) for power system stability. The aim of this work is to predict the stability status for each generator when the system is under a contingency. This is based on the initial condition of an operating point, which is represented by the generator rotor angle at a certain load level. An automatic data generation algorithm is developed for the training and testing process. The proposed method has been successfully tested on the IEEE 9-bus test system and the 87-bus system for Peninsular Malaysia.

Keyword: Artificial neural network (ANN); Contingency analysis; Dynamic security assessment (DSA); Rotor angle stability