

Power flow and loss tracing in deregulated transmission system using proportional tree method

Abstract

Tracing the flow of electricity becomes an important issue in transmission open access. This is due to transmission open access may bring the fairness and transparency to all users. Since the complexity of electrical transmission system, it is not straightforward to map out the contribution of each generator to lines, losses and loads. Thus there are several algorithms proposed to overcome this matter. This paper discusses and emphasizes the method that uses proportional tree method (PTM) to trace the power transfer from individual generators to the transmission system. After power flow solution is obtained, the system is modeled conceptually like a tree, where the power flow tracing is started from particular generator to a particular line or load through the routes that connect between them. It is also possible to pinpoint the losses at each transmission line to which generator. In this paper, 4-bus, IEEE 14-bus and 30-bus test systems are used to show the effectiveness of the method Comparison with other method is also given.