Nonlinear Model Predictive Control Containing Neural Model and Controller

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Abstrak

In electric power systems that consist of some generators, electric power stability in supplies side becomes the most important problems, which must be paid attention. In the interconnection system, if there are some troubles in transmission, generator or load will cause another generators feel the existence of instability condition. For instability condition which not too serious, system can overcome the fault and will not influence stability of system as a whole. However, for in big scale of fault and happened in a long duration can be ejected system becoming unstable and will result hampered of electrics energy supply to the load For the worst condition could be blackout condition.
This article studies about improvement of the stability of the system by using excitation current and the prime mover of generators, which is coordinated fuzzy logic control in synchronize generator. By using annexation from three methods above, the condition of stability of the power system can attain the stability. The transient stability needed control in order that system with good stability can return to normal condition. Faulted electric power system often caused by failure in controlling the transient stability. It is because in transient stability forms critical condition for electrical power system.
By controlling the level of excitation current and mechanical energy from the prime mover of generators which controlled by fuzzy logic when the fault is happened will make acceleration area become decreasing and deceleration area become increasing with the result that system can be stable quickly. It visible that from result of simulation obtained if using generator oscillation of fuzzy logic control, transient period becoming shorter and amplitude of oscillation wave is smaller compare by using without fuzzy logic. Likewise, this method is able loo to overcome transient condition at starting period of a generator.