ABSTRACT*

Power system stability can be defined as the property of a power system that enables it to remain in a state of operating equilibrium under normal operating conditions and to regain an acceptable state of equilibrium after being subjected to a disturbance. There are different forms of power systems stability, but this project is focused on rotor angle stability. Rotor angle stability is the ability of interconnected synchronous machines of a power system to remain in synchronism. For convenience in analysis and for gaining useful insight into de nature of stability problems, rotor angle stability phenomena are characterized in two categories:

1. Small-signal stability: is the ability of the power system to maintain synchronism under small disturbances like variation in load and generation.

2. Transient stability is the ability of the power system to maintain synchronism when subjected to a severe transient disturbance like short-circuits of different types.

Energy consumption can be caused by the industrial and commercial growing in the country and the increase in the population. This power consumption increase required the construction of new power plants to satisfy the demand. This growing will cause changes in power flow and dynamics characteristic of the power system that have to be taken into account for the development of energy in any electrical grid. For that, a dynamic simulation model of a power plant will be built with Matlab/Simulink with the objective of doing a dynamic study of the system taking into account the future generators. This study let us to analyse the dynamic behaviour of the power plant with small and severe disturbances in the power system. The dynamic study take into account the most important parts of the power plant like Turbine, Governor, Generator, Excitation system, transformers and transmission lines, etc to get a good

***THIS IS JUST PROPOSAL!**