

A B S T R A C T

TESTING OF VARIOUS TURBINE/EXCITER MODELS
FOR TRANSIENT STABILITY STUDIES
IN THE TRINIDAD AND TOBAGO ELECTRICITY COMMISSION.

Ravi Shukla

The increasing usage of digital computers for stability studies has led to a demand for more accurate generator, turbine and exciter models.

This project investigates the difference in simulation between basic exciter/turbine models and exciter/turbine models as recommended by the manufacturers of some of the machines on the T. & T.E.C. system. The classical one machine - infinite bus system was used to test the various turbine/exciter transient stability models. Simulation was done using a transient stability program (5) recently acquired by T. & T.E.C. The turbine/exciter transient models contained in this program are the basic models. These were modified to include the turbine/exciter models recommended by the manufacturers.

It is observed that the simulations for the recommended turbine/exciter models for POS #3 & #4, John Brown, Westinghouse and Penal #8 & #10 were different to simulations of the basic turbine/exciter models. The results for both basic and recommended turbine/exciter models for Penal #9 are similar.

It is recommended that for a single machine study and when few machines are being studied, that the manufacturers' turbine/exciter models be used. For large system studies, especially a very "stiff" system, the basic turbine/exciter models will yield results of sufficient accuracy.

Ravi Shukla.