

Although ABSTRACT statements can be made as

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for the Studies of Wind Turbine Generator transient sta-
bility behaviour are performed for a small power system.
The system for the island of Barbados, as it is expected
to appear in 1985, has been chosen due to the fact that
suitable sites can be found in Barbados, which is swept
by the tradewinds.

A program has been developed to carry out the
above studies and can be used to analyse the transient
behaviour of both synchronous alternators and induction
generators. The effects of excitation and governor
control have been incorporated into the program in an
effort to make analyses valid for periods of study greater
than two seconds. The program has not yet been extended
to include two other important features peculiar to Wind
Turbine Generators. These are the effects of gusting
wind conditions and drive train dynamics, since quite a
few modern Wind Turbine Generators have been designed with
a "soft" coupling in the low speed side of their drive
trains. For the purpose of the study, it was assumed that
the generator was driven through a hydraulic type device
and was not solidly coupled to the high inertia turbine
rotor.

Although no concrete statements can be made as to whether or not Wind Turbine Generators will remain in synchronism with the conventional generating plant for the studies carried out on the Barbados power system, it is felt that the groundwork has been laid for the development of the analysis techniques. Engineers planning for the integration of Wind Turbine Generators into their power system network will have to consider what modifications are necessary to their techniques of stability analysis, to take account of the special characteristics of these machines.

- To Professor John F. Szablya for his contribution to my understanding of Power Systems and for awakening my interest in the subject of Wind Turbine Generators.

- To my Mother and Father, Mr & Mrs G.B. Williams and Miss Jennifer Joseph, for their continued support during my studies.

- To Mrs Myrna Joseph for typing the majority of this Report and Mrs Devora Williams for giving of her time in typing the remainder.

- To Mr John Whittingham of the Caribbean Development Bank and Mr Bob Lecharanski, formerly of the same organization, for the time and effort spent in helping me.