

THE TRANSIENT AND STEADY STATE BEHAVIOUR
OF
A LONG SUBMARINE CABLE

ABSTRACT

The subject matter of this thesis deals separately with the transient and steady state behaviour of a long submarine cable. The intention of the study is analytical rather than descriptive. However, mention is made briefly of the practical needs which might lead to such a study.

Mathematical methods, derived from the use of equivalent circuits that describe the physical system, have been employed. The study has been aided largely by the use of the IBM 1620 computer, which was found to be very satisfactory in handling the above-mentioned methods of analysis.

Emphasis is centered on a cable with shunt inductive termination, and the system is assumed to be linear.

The transient study deals particularly with 'line energisation', while the steady state behaviour is viewed with special reference to the inductive termination as a method of 'compensation!.