Thomas Douglas Stanley

ANALYSIS OF THREE-PHASE NETWORKS
BY THE METHOD OF SYMMETRICAL COMPONENTS.

The method of symmetrical components is explained and applied to the calculation of fault currents in a simple case. The impedances offered to the different phase sequence currents in synchronous machines, transformers and transmission lines, are discussed. The general method for the simplification of networks is presented and the whole of the above is applied to the calculation of fault conditions as they would exist on an actual system. The 220 Kv. system of the Hydro Electric Power Commission is used and voltages and currents at Chats are calculated for different types of faults at Masson. Some other aspects of symmetrical components are mentioned in conclusion.

The methods and results of a series of tests on the reactances of a synchronous machine are given in Appendix A. Appendix B is a description of the Modern Automatic Low-Voltage A. C. Network.

R. J. Westwood

AN INVESTIGATION INTO THE REACTIONS THAT OCCUR
DURING THE CYANIDATION OF GOLD ORES.

The action of pure pyrite and of pyrrhotite, the most common iron minerals found in gold ores, on lime solutions and on cyanide solutions, have been studied under various conditions.

In the absence of air, pyrite has only a slight chemical action on lime solution, while in the presence of air it forms calcium sulphite and thiosulphate. It has only a comparatively small cyanide consumption.

Pyrrhotite forms calcium polysulphide and thiosulphate with lime solutions in the absence of air, while an aerated pulp contains mainly calcium thiosulphate. It has a large cyanide consumption. thiocyanate being the main product of the reaction.

An appendix deals with the methods of analysis used.