

GENERAL PROCEDURE OF PROTECTION PLANNING FOR INSTALLATION OF DISTRIBUTED GENERATION IN DISTRIBUTION NETWORK

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ABSTRACT

Distributed generation located in the distribution network has certain positive effects environmentally and also electrically thinking. However, some challenging problems are also found. Distributed generation may result in problems with controlling and operating the network. This article focuses on protection issues, which are generally acknowledged as one of the most important barriers against a more wide use of the distributed generation. Some of the protection related problems are evident and relatively easy to handle, while certain problems are relatively unknown or require special studies in order to avoid problems. The most important effort in this sense is made during the interconnection planning process. As the amount of distributed generation on distribution level is forecasted to increase, automating the required studies to a degree as high as possible is an interesting issue. Similarly, applying the daily-used network information and planning systems instead of building case-specific simulation environments could ease and intensify the planning effort significantly. General-level procedure for planning and coordinating the protection in such installation case has evolved and is introduced in this article. The procedure is suitable to be used as a guide in manual planning or to be implemented as a new functionality of a network information system. The most important outputs of the procedure are the estimate of the network modifications needed and the requirements for the operation of the new unit's protection.