

Special Issue

Integrated Transmission and Distribution System Analysis II

Message from the Guest Editors

Traditionally, transmission and distribution systems have been analyzed separately, and this continues to be the predominant practice. Furthermore, if balance is assumed, transmission is analyzed as a single phase, and substations and secondary distribution are rarely included in this analysis. There is an ever-increasing number of renewable generators being installed on secondary distribution systems, where conductors have very different electrical characteristics than those of primary distribution. These renewable generators can, and in some cases do, cause a reverse power flow from distribution toward transmission. With unbalanced generation at the distribution level, and sometimes unbalanced voltage delivery in transmission due to non-transposed lines, the use of an unbalanced, three-phase transmission model is required for accuracy. The incorporation of DERs at the distribution level is creating the need for integrated transmission and distribution analysis.

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