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Static Synchronous Compensator (SATACOM) Performance for Grid – Connected Wind Turbines

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Abstract-The principle aim for using SATATCOM is reactive power control for regulation and reduction of unbalance cases which happen in the electrical grid. When connected the wind farm to the power system, it appears two fundamental issues; stability and control. A thorough study is needed to identify the potential problems and to develop measures to mitigate them. Although the connection of wind farm into an existing transmission system does not require a major redesign, it necessitates additional control and compensating equipment to enable recovery from severe system disturbance. This paper investigates the use of a Static Synchronous Compensator (STATCOM) along with wind farm for the purpose of stabilizing the grid voltage after, grid side disturbances such as a three phase or two phase short circuit fault, sudden load changes (increasing or decreasing) and temporary trip of a wind turbine or wind farm (in our case). This paper is focusing on fundamental grid operational requirement which are connected with wind farm to maintain nominal voltages at the point of common coupling by regular voltage and show the results with and without the STATCOM.