

## **MODES OF OPERATION OF SYNCHRONOUS GENERATORS**

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### **Abstract**

This paper begins with explanation of operating principles of Governors & Automatic Voltage Regulators (AVRs). Basic modes of operation of synchronous generators in islanded & synchronized modes are discussed & operational philosophy is explained thoroughly. It is really a challenge for supplying the load demand in the island condition whilst regulating the frequency and voltage of the island within permissible limits. Clearly, there is a need of control switching between the grid-parallel and islanding operation. The aim of this work is to look into two main challenges associated with islanded operation: frequency regulation and generator control. A performance analysis is tried to explain for a synchronous generator with its speed and voltage regulators, running stand alone, running in parallel with the Grid system & with other synchronous generators. It must be highlighted that this generator is driven by a steam turbine.