CO-ORDINATION CONTROL OF WIND/FUEL CELL BASED HYBRID MICRO-GRID IN MATLAB/SIMULINK AS GRID CONNECTED MODE

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ABSTRACT:
Micro grid comprises of micro-energy resources, loads together with energy storage devices with single controllable system to provide power to small area. A hybrid grid consists of both DC and AC grid, where AC grid includes AC power sources, AC loads and DC grid includes DC power sources, DC loads. Both DC and AC network are connected together by bi-directional power electronics converters with common energy storage devices. This paper proposes co-ordination control and operational analysis of Hybrid Micro grid consisting of Wind turbine (DFIG) and Fuel cell stack (SOFC) with single controllable system which in turn reduces process of multiple conversions in an individual DC or AC grid i.e., DC-AC-DC or AC-DC-AC. Proposed Hybrid micro grid operates in grid tied or in grid connected mode. Co-ordination control mechanisms are implemented for power electronic converters for smooth power exchange between DC and AC links and for stable operation under various resources and load conditions. Proposed small hybrid micro grid is considered, modeled simulated and analyzed using MATLAB/ Simulink.

KEYWORDS: Micro-Hybrid grid; Fuel cell stack; WTG; Grid connected mode; Bidirectional power electronics converter.

REFERENCES

