

Article Abstract

Title:	A new real time approach using dSPACE R&D Controller Board for reactive power control by SVC in autonomous wind-diesel hybrid power systems
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Abstract:	This paper presents the reactive power control of Autonomous Wind-Diesel Hybrid Power Systems (AWDHPS) under dSPACE real time environment. The reactive power absorption and supply is done by a Static VAR Compensator (SVC) controlled by proportional plus integral controller and tuned by dSPACE DS 1104. Three models of AWDHPS are considered in the study. The disturbance parameters in the models were the change in reactive power of the load (ΔQ_L), the change in mechanical power input of the induction generator (ΔP_{IW}) and the change in mechanical power input of two induction generators (ΔP_{IW1} , ΔP_{IW2}) respectively. The parameters were dynamically varied in control desk of dSPACE Software with DS1104 Research and Development controller board mounted in personal computer under real time environment.
Keywords:	autonomous wind-diesel hybrid power system, dSPACE, induction generator, synchronous generator, static var compensator.