



## Review on Voltage Stability of DFIG Wind Turbine by Using DVR

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### ABSTRACT

In this paper ,Among the most rigorous power system disturbances, voltage sags, swells, interruptions & transients degrade the power quality. Though voltage sags last only for few cycles, it is enough to bring entire power plant out of synchronism from grid, causing the considerable economic loss. It has been identified that power quality can be degraded both due to utility side abnormalities as well as the customer side abnormalities.

When these types of wind farms are connected to the microgrid, then it is difficult to predict their time of uninterrupted operation. Because, when wind farms are connected to grid, the grid codes are to be satisfied. One of the important requirements is the fault ride through ability of the wind farm. When momentary faults on the system occur the system is subjected to variations in the output. Thus, fails to satisfy the grid codes. Faults in the power system affect the magnitude of current & voltage of the system. These fluctuations in the parameters create disturbance in the operation of the generators. The fluctuations bring generators into instability which may in turn result into loss of synchronism. The problems related to the voltage stability may be cleared by the use of custom power devices. These devices provide the customized ability to control the

power in the circuits.

One such reliable customer power device used to recover the

problems related to

the voltage is the Dynamic Voltage Restorer (DVR). The DVR is applied to DFIG for maintaining the voltage output constant.. The DVR compensates the faulty line voltage, during that the DFIG wind turbine continues its nominal operation as demanded in actual grid codes.

Key words: wind turbine, DVR, DFIG, PWM.

### INTRODUCTION

We know the development in the power system has been increased the practice of power electronic components. The industrialized devices are typically based on power electronic devices like programmable logical controllers & electronic drives. These devices essentially need The common power quality problems are as shadows .

1. Voltage dip is defined as the decrease in rms value of the voltage to a value between 0.1pu to 0.9 pu & lasting for the period between 0.5 cycles to 1 minute, Fig. 1.1. System faults are the core reasons of the voltage sags & contingent up on the fault clearing time; it may last for the 3 cycles to 30 cycles as the voltage regulation devices

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