

POWER QUALITY ENHANCEMENT BY USING DSTATCOM IN DISTRIBUTION SIDE

***K.E.Lakshmi Prabha¹, M.Vinoth Kumar², Revathi³**,

^{1,2,3}Assistant Professor, Department of EEE, Karpaga Vinayaga College of Engineering and Technology, Chennai,

*Corresponding Author

E-mail: nilaakanu@gmail.com

The power quality of electricity supplied to consumers is of utmost importance for the proper functioning of modern electrical and electronic equipment. The presence of various power quality issues such as voltage fluctuations, harmonics, and voltage sags can cause damage to electrical equipment, reduce their lifespan, and even lead to system failures. In recent years, distribution static synchronous compensators (DSTATCOMs) have emerged as an effective solution to improve power quality at the distribution level. This paper presents an overview of the power quality issues in distribution systems and the operation principle of DSTATCOMs. The paper also discusses the use of DSTATCOMs for mitigating voltage sags, improving power factor, and reducing harmonics in the distribution system. The simulation results show that DSTATCOMs can significantly enhance power quality in the distribution system, which can lead to improved system reliability, reduced power losses, and enhanced energy efficiency.

Keywords: Distribution static synchronous compensators (DSTATCOMs)

POWER QUALITY ENHANCEMENT AT GRID SIDE USING VIENNA RECTIFIER IN WIND ENERGY CONVERSION SYSTEMS

P.Muthumari*, R.Saran, R.Karthikeyan

Department of Electrical and Electronics Engineering, Karpaga Vinayaga College of Engineering and Technology, Chengalpattu

*Corresponding Author: nilaakanu@gmail.com

This abstract discusses the application of Vienna rectifier technology for power quality improvement in wind energy conversion systems (WECS). WECS are becoming increasingly popular as a renewable energy source, but their integration into the power grid can cause issues with power quality due to the intermittent nature of wind energy. The use of Vienna rectifiers in WECS can address these power quality issues by providing a higher power factor and reducing harmonic distortion in the system. This abstract will explore the benefits of using Vienna rectifiers in WECS, including improved efficiency and reliability, and the potential for cost savings in the long term. Additionally, the abstract will discuss the challenges associated with implementing Vienna rectifiers in WECS and potential solutions to overcome them. Overall, the use of Vienna rectifiers (VR) in WECS can improve power quality and help to integrate wind energy into the power grid more efficiently and reliably.

Keywords: Wind energy conversion systems (WECS), Vienna Rectifiers (VR)