A new control algorithm for dynamic voltage restorer (DVR) to improve power quality and voltage in distribution systems

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Abstract:

One the most important problems in recent sensitive loads is the quality of voltage. For this challenge custom power devices are used in distribution systems. Dynamic voltage restorer (DVR) is a custom power device that improves voltage, decrease power distortion, filter harmonics and balance distributed generations (DGs) with low voltage distribution system. In this paper, a new algorithm is proposed for DVR in which two PI controllers, improve the performance of DVR and both voltage sag and swell.

Keywords: Dynamic voltage restorer (DVR), voltage sag, voltage swell, power quality, synchronous reference frame (SRF)

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