

equipped with DFIGURE during voltage sag and voltage swell at the grid side. The proposed control algorithm of the SMES unit is simple and easy to implement and is able to improve the FRT of the DFIGURE. The SMES unit, on the other hand is still an exorbitant bit of hardware; in any case, because of the improvement of high temperature superconducting materials, its application in power systems is expected to become viable in the near future.

References

- [1] S. Jing, T. Yuejin, X. Yajun, R. Li, and L. Jingdong, "SMES based excitation system for doubly-fed induction generator in wind power application," *IEEE Trans. Appl. Supercond.*, vol. 21, no. 3, pp. 1105–1108, Jun. 2011.
- [2] Dynamic Performance of DFIGURE using SMES For WECS J Srinadh, S Sankara Prasad *PG Student, 2Assistant Professor, EEE Dept., GPCET, INDIA.*
- [3] Superconducting Magnetic Energy Storage System based Improvement of Power Quality on Wind/PV Systems S. Ashwanth1, .Manikandan2, Dr. A. Mahabub Basha.
- [4] F. Beaufays, Y.A. Magid, and B.Windrow, "Application of neural network to load frequency control in power system", *Neural Network*, Vol.7, No.1,pp.183-194,1994.
- [5] S. Hu, X. Lin, Y. Kang, and X. Zou, "An improved low-voltage ride through control strategy of doubly fed induction generator during grid faults," *IEEE Trans. Power Electron.*, vol. 26, no. 12, pp. 3653–3665, Dec. 2011.
- [6] A. Abu-Siada and S. Islam, "Application of SMES unit in improving the performance of an AC/DC power system," *IEEE Trans. Sustainable Energy*, vol. 2, no. 2, pp. 109–121, Apr. 2011.
- [7] A. Abu-Siada, "Application of superconducting magnetic energy storage units to improve power system performance," Ph.D. thesis, Dept. Elect. Eng., Curtin Univ. Technol., Bentley, Australia, 2004.
- [8] M. H. Ali, W. Bin, and R. A. Dougal, "An overview of SMES applications in power and energy systems," *IEEE Trans. Sustainable Energy*, vol. 1, no. 1, pp. 38–47, Apr. 2010.
- [9] H. J. Boenig and J. F. Hauer, "Commissioning tests of the Bonneville power administration 30 MJ superconducting magnetic energy storage unit," *IEEE Trans. Power App. Syst.*, vol. PAS-104, no. 2, pp. 302–312, Feb. 1985.
- [10] M. Altin, O. Goksu, R. Teodorescu, P. Rodriguez, B. B. Jensen, and L. Helle, "Overview of recent grid codes for wind power integration," in *Proc. 12th Int. Conf. OPTIM*, 2010, pp. 1152–1160.
- [11] F. Blaabjerg and Z. Chen, *Power Electronics for Modern Wind Turbines*. Aalborg, Denmark: Morgan & Claypool, 2006, p. 18.
- [12] J. G. Slootweg, S. W. H. de Haan, H. Polinder, and W. L. Kling, "General model for representing variable speed wind turbines in power system dynamics simulations," *IEEE Trans. Power Syst.*, vol. 18, no. 1, pp. 144–151, Feb. 2003.

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