IJDACR
International Journal Of Digital Application & Contemporary Research

International Journal of Digital Application & Contemporary research
Website: www.ijdacr.com (Volume 1, Issue 4, November 2012)

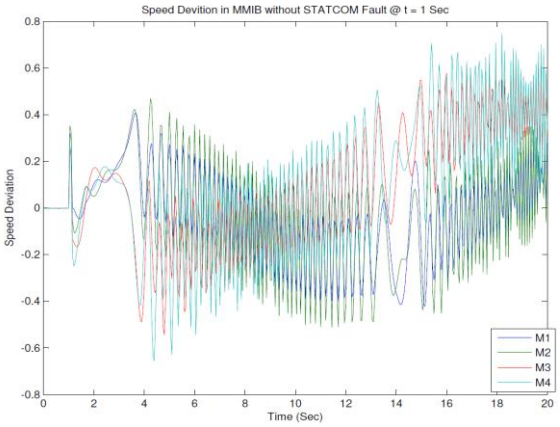

Figure 11: Speed Deviation in MMIB without STATCOM

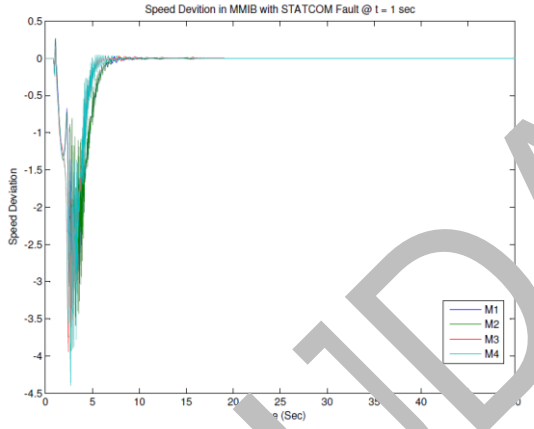

Figure 12: Speed Deviation in MMIB with STATCOM

IV. CONCLUSIONS

In this paper, dynamic behaviour of single and multi-machine system installed with STATCOM is investigated under 3-phase fault. Proposed work is implemented using MATLAB/SIMULINK. Results showing the impact of STATCOM over the SMIB and MMIB system. The STATCOM is used to control power flow of power system by injecting appropriate reactive power during dynamic state. Computer simulation results show that STATCOM not only considerably improves transient stability but also compensates the reactive power in steady state. Therefore STATCOM can increase reliability and capability of AC transmission system.

REFERENCES

[1] Hingorani and N.G.Gyungi – "Understanding Facts Devices"- IEEE Press, 2000

[2] X.P.Zhang and B.Pal, "Flexible AC Transmissions systems : Modelling and Control", Springer Berlin Heidelberg, New York.

[3] Tan, Y.L "Analysis of line compensation by shunt connected FACTS Controllers: a comparison between

[4] SVC and STATCOM.", IEEE proceedings on Power Engineering Review, Vol 19, No 8, pp:57-58, Aug1999.

[5] C.Schaduer and H.Mehta, "Vector analysis and control of advanced static var compensator," IEEE

[6] Proceedings on generation, transmission and distribution, Vol 140, No 4, pp: 299-306, July 1993.

[7] Laszlo Gyugi, "Dynamic compensation of ac transmission line by solid state synchronous voltage sources," IEEE transaction on power d[illegible]ol 9, No 2, pp: 904-911, April 1994.

[8] D.R.Trainb[illegible], Tenakoon S.B. and R.E Morrison, "Analysis [illegible] GTO based static var compensators." IE[illegible]Electrical Power Application, Vol 141, [illegible]6 , pp: 293-302, Nov 1994.

[9] J.B.Ekan[illegible]ake and N.jenkins, "A three level adva[illegible]ed s[illegible]ic var compensator," IEEE transaction on po[illegible]er delivery, Vol. 11, No 1, pp:540 – 545, Jan 199[illegible]

[10] [illegible].Yoon and I.S.Kin, "Thyristor controlled static condenser with new double firing phase control." IEEE Industry applications society conference, Vol 2, San Diego, pp: 999-1006, Oct 1996.

[11] R.Padiyar and A.M.Kulkarni, "Analysis and design of voltage control of static condenser," IEEE Conf on power electronics, drives and energy system for industrial growth, Vol 1, New Delhi, pp: 393-398, 1996.

[12] Nicolas Lechevin and V.Rajagopalan, "Nonlinear control for STATCOM based on differential algebra," IEEE power electronics specialist conference, Vol 1, Fukuoka, pp: 323-334, 1998.

[13] Chun Li Ohrang Jiang, Z.Wang,"Design of rule based controller for STATCOM." IEEE Industrial electronics society conference, Vol 1, Aachen, pp: 407-472, 1998.

[14] M.Moadders, A.M.Gole,"Neural Network controlled optimal PWM STATCOM." IEEE Transaction on power delivery, Vol 14, No 2, pp: 481-488, April 1999.

[15] Yixin Ni and L.O.Mak, " Fuzzy logic damping controller for FACTS devices in Interconnected power systems." Proceedings of IEEE Intl. Symposium on circuits and systems, Vol. 5, pp: 591-594, 1999