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Recommended Citation
Yang, Zhiping; Chen, Shen; Zhang, Lin; Atcitty, S.; and Crow, Mariesa, "Integration of a StatCom and battery energy storage" (2001). Faculty Research & Creative Works. Paper 184.
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Integration of a StatCom and Battery Energy Storage

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Abstract—The integration of an energy storage system, such as battery energy storage (BESS), into a FACTS device can provide dynamic decentralized active power capabilities and much needed flexibility for mitigating transmission level power flow problems. This paper will introduce an integrated StatCom/BESS for the improvement of dynamic and transient stability and transmission capability; compare the performance of the different FACTS/BESS combinations, and provide experimental verification of the proposed controls on a scaled StatCom/BESS system.

Keywords. FACTS, Battery Energy Storage, Power System Dynamic Stability, Control System Synthesis