

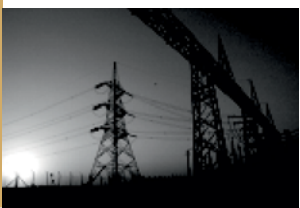
# TRANSIENT STABILITY ENHANCEMENT OF EGYPTIAN NATIONAL GRID INCLUDING NUCLEAR POWER PLANT IN DABAA AREA

Authors: Mohamed Abdul Raouf Shafei, DAR Engineering

, Doaa Khalil Ibrahim, Member IEEE, Essam El-Din Abo El-Zahab, Department of Electrical Power Engineering, Faculty of Engineering, Cairo University, Egypt

The main purpose of this paper is focused upon the enhancement of transient stability and improvement of the dynamic behavior of Egyptian electrical power grid including new nuclear power station in Dabaa area. This target is achieved via employing only one device as a first approach of solution. That device is the Static VAR Compensator (SVC). Capability of that device to provide synchronizing torque is tested at different implementation conditions, as well as, different locations of feedback signals. For that purpose, singular value decomposition is used and siting index program is created. A second approach of solution is also proposed, in which a Power System Stabilizer (PSS) is added as a more effective device in providing damping torque. For the two proposed approaches, devices' time constants and gains are set using genetic algorithm optimization technique (GA).

*\*This paper was presented at IEEE PECON*



To read the full paper, please contact  
[dar@dar-engineering.com](mailto:dar@dar-engineering.com)