

**TRANSIENT STABILITY ANALYSIS OF THE IEEE 9 BUS MULTI MACHINE SYSTEM  
USING THE ELECTRICAL TRANSIENT ANALYZER  
PROGRAM (ETAP) SOFTWARE**

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**ABSTRACT**

It is widely accepted that transient stability is an important aspect in designing and upgrading electric power system. In this paper modeling and transient stability analysis of the IEEE 9 BUS multi machine system using the electrical Transient analyzer program (ETAP) software has been done to observe the effect of power system stabilizer (PSS) and shunt capacitor. A three phase fault has been created at Bus 7, to analyze the effect of fault and by using the PSS and shunt capacitor to the transient stability improvement has been observed. Transient stability improvement has been tested to three phase fault at bus 7 after 0.1 second and fault has been cleared after 0.3 seconds by use of PSS and shunt capacitor method for the test system the oscillation for generator electrical power has been reduced and steady state power transfer has been enhanced.

**KEYWORDS:** Transient Stability, ETAP, PSS, Shunt Capacitor