DAR ENGINEERING الدار الدولية للهندسة

# PRIMARY EQUIPMENT IN SUBSTATION

## *Synopsis*

Primary equipments in a substation play a very important role in maintaining power system integrity and power supply availability to the end user. Modern power system is very complex in nature which produces transients during various switching operations, stability problems at different operating contingencies and power system faults, instrument transformers non linear response causing secondary equipment misoperation resulting further degradation of power system integrity.

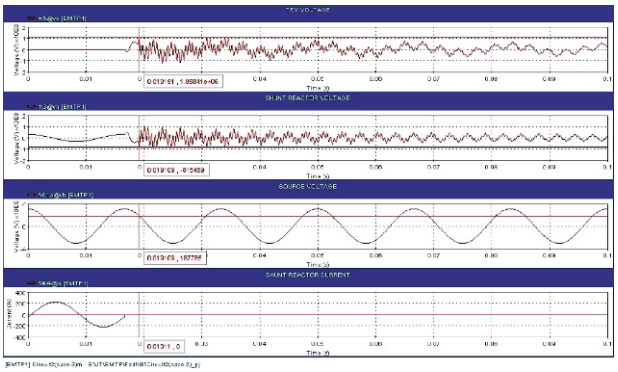
Power system elements like transformers and transformer bushings can damage due to various reasons and installing online condition monitoring / Power quality monitoring system can provide early warning message to take immediate corrective action.

Flexible AC Transmission System (FACTS) provide system stability enhancement.

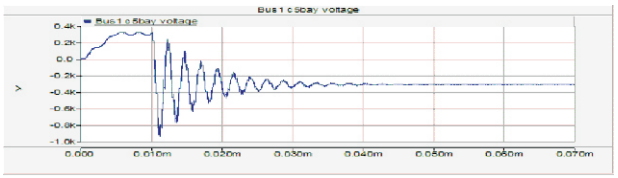
The new technologies provide a face-lift to the described problem. Such technological changes are applicable to Power Transformers, Circuit Breakers and Instrument Transformers.

This paper provides information about such technological changes specifying the advantages for the problems at the existing technology.

This paper was submitted by Mr. Johnson Thomai at the Substation Automation & Smart Grid Forum (SASG) 2011 in Jeddah




Simulated Transient recovery voltage due to current chopping in 380kV Shunt reactor – No surge arrester




Simulated Fast Transient voltage due to switching operation in 380kV GIS

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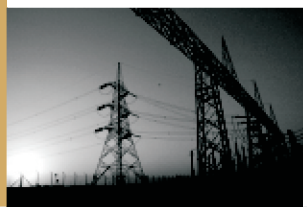

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