

ATP Simulation of Capacitor Protection Scheme

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This paper describes the ATP (Alternative Transients Program) modeling and simulation of a protection scheme used to protect 161kV shunt capacitor banks in the TVA region. The ATP simulations uncovered a problem with the current transformer used in the scheme (due to excitation characteristic) making the scheme ineffectual. This analysis resulted in replacing CTs used in this scheme with one having an appropriate excitation characteristic. The paper describes the protection scheme, modeling of the current transformer and capacitor bank in ATP, and a hand calculation method of evaluating the schemes performance.