

SAARC Training Workshop 'Power System Studies for Synchronization of Multiple Systems'

Short Circuit Analysis in PSS/E for Simple 3-Phase Balanced Symmetrical System

Day-2-C

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SAARC Energy Centre, Islamabad
www.saarcenergy.org



hassan@powerplannersint.com
www.powerplannersint.com

Overview

- Fault analysis in PSS/E based on a symmetrical component system representation
- The positive-sequence system model as established in load flow is used directly in this analysis
- The negative and zero sequence system representations for fault analysis work are established simply by appending it to the parameter lists

How to prepare PSS/E Case for simple balanced 3-Phase Fault

- Base Load Flow File (*.sav)
- Generator's and Step-Up Transformers Data to be added to convert them into Sources
- Modeling of GSU within generator data
 - MBASE of Gen and GSU to be the same
 - Y- Δ two winding transformer:
 - Δ connected on Generator side
 - Y connected and solidly grounded on transmission system side
- Modeling of GSU as a separate branch
 - MBASE of Gen and GSU may be different
 - Y- Δ configuration different than mentioned above

Presentation and Interpretation of Results of Short Circuit Analysis (3-Phase Balanced)

- Select from Options Polar Coordinate instead of Rectangular coordinates
- Tabular Form of results showing detailed output
- Levels of bus-bars away from the faulted bus to know the fault current contributions
- Graphical Form
- Where the fault levels would be high and why:
- Relatively higher at nodes near the sources and less at nodes away from the sources