



TRANSMISSION & INDUSTRIAL SYSTEM ANALYSIS

Contingency Analysis

Power Flow

Short-Circuit

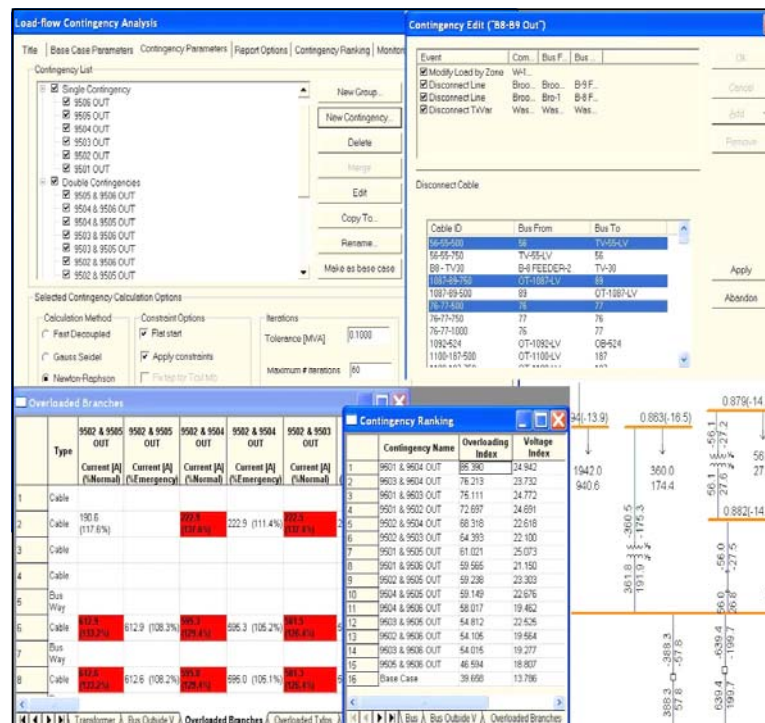
Harmonics

Voltage Stability

And more...

CYM-AC Contingency, Full AC Contingency Analysis Module

The AC CONTINGENCY operates in conjunction with CYMFLOW, for Power-Flow related contingency analysis. The analytical approach used is the same as CYMFLOW; i.e. the contingency analysis is performed using full AC power flow solutions (no DC approximations). The module features the sequential solution of all contingencies in a single run.



Analytical Capabilities

The contingency module is structured so that an unlimited number of “what-if” scenarios can be included in a given contingency study. All contingency-related system modifications refer to the base case network single outages and/or multiple outages/modifications can be concurrently defined at will to represent an adverse contingency analysis scenario such as:

- Modify Loads Globally, Individually or by Zone.
- Modify Generation Globally, Individually or by Zone.
- Connection and Disconnection of Branches.
- Shunt Modification.
- Addition and Removal of Induction and Synchronous Motors.
- Connection and Disconnection of Buses.

Contingency N-1, N-2, N-3

By using this option, you can define a group of single-, double-, or triple-branch outage contingency studies (one, two or three branches out in each contingency study). You must specify the network branches that you are interested in, by voltage level and type. PSAF will create the desired Group automatically, including the corresponding studies.

Contingency Ranking

This feature allows you to add or eliminate contingency indexes (ranking) to the tabular report. This contingency ranking methodology is designated for the automatic ranking, selection of contingency cases and to identify the most severe contingencies.

Contingency Ranking	Monitoring
Bus or Branch Reports vs Contingency	
Bus Voltage Reports	
<input type="checkbox"/> Voltage range violation	
<input type="checkbox"/> Voltage deviation from "Base Case" results	
Branch Loading Reports	
<input type="checkbox"/> Overloading violation	
<input type="checkbox"/> Loading deviation from "Base Case" results	
Branch Bus Voltage Angle Reports	
<input type="checkbox"/> Voltage Angle Difference Violation	
N.B.: Only buses or branches selected via the "Monitoring" tab will be reported vs selected contingencies in the Grid Reports	
Global Contingency Ranking	
<input type="checkbox"/> Voltage Collapse	
<input checked="" type="checkbox"/> Branch Overloading	
N.B.: Voltage collapse criteria involves all the system buses. Branch overloading criteria involves all the branches including transformers.	
N.B.: The largest index obtained from each of the criteria listed above defines the worst contingency relative to that criteria.	



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