

# Automated Network Forecast Analysis

## Manage and plan your network expansions and changes over time

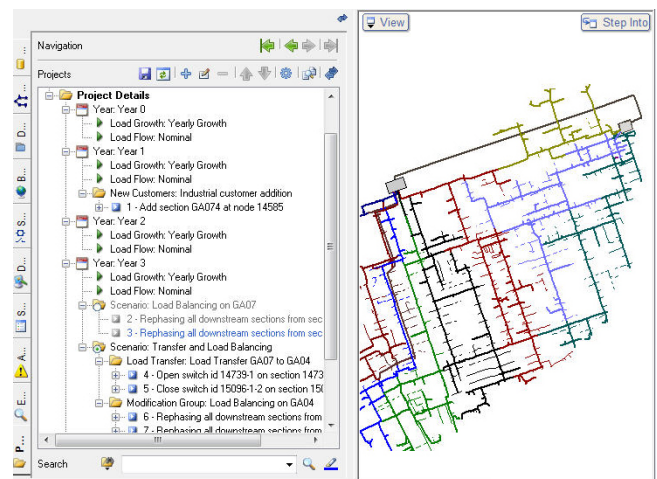
The Automated Network Forecast Analysis module is the add-on to the CYME software designed to help you plan and manage expansions and changes over time on your distribution network. It allows creating, viewing and modifying time-dependent projects/scenarios in a selected period. This module will considerably help you structure distribution planning projects.

The module inherits its main analytical and topological functions from the base and optional modules of the CYME software. Taking into account future changes on the network, you will be able to simulate different scenarios (such as addition of loads at a given date (year, month or day), change/ replacement of power transformers within the substation, rephasing/reconductoring project, network switching or reconfiguration, etc.) that will allow identifying and correcting problems related to system growth.

Network changes can be grouped to facilitate the viewing and editing of the main project. For example if a project is delayed, the user can simply move the concerned group of modifications to a different year and see the impact on the whole network. If a project is cancelled or put on hold, the associated tasks can be disabled to reflect that situation and the module will flag any abnormal conditions due to this change.

The module's capabilities are further enhanced by the Advanced Project Manager functions which are included in the Automated Network Forecast Analysis module. These combined functionalities support detailed preparation of time-based projects that can span over several years.

Specific analyses and reports can thus be attached to any group of network changes.



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## Program Features

The main features of the module include:

- Automated analyses insertion such as: load flow, short-circuit, load growth, load allocation, contingency that can be related to any point on the network, at any point in time, based on identified network modifications for both normal or contingency mode of operations.
- Save analysis configurations. User-defined configurations can be saved so that parameters can be reused in additional analysis.
- Validation process: the sequence of tasks is verified to avoid inserting invalid changes. The same validation process is run when loading an existing project to verify the project against any updates to the base case.
- Multi-level structured project: allows multiple users to work on the creation and modification of the same network easily and concurrently in a project database apart from the main CYME database.
- Migration tool: facilitates the transfer of forecasts from one year to the next, thus minimizing data handling and modifications going from one planning cycle to the other.
- Scenario mode: allows the user to analyze all the alternatives contemplated and easily compare the impacts of each solution.

## Results Viewer

The results are presented in an enhanced reporting tool that conveys an overall view of the network over the project scheduled years and allows the user to dig into more detailed data on any part of the network.

With this results viewer, you can generate reports for each distribution line, substation, and zone contained in the network.

- Contingency report: backup feeder and outage feeder.
- Network / Feeder summary report: results over the forecasted years for demand, overloads, losses, new customers, load transfers, abnormal conditions etc.

### Feeder Summary Report

#### Units

MW  MVA  MVAF

NetworkID : GA05

Area : East

Voltage level : 12kV

#### Forecasted Peak Demand

Forecasted Peak	2009	2010	2011	2012	2013
Normal Load Demand (MVA)	6.21	6.41	6.61	6.82	7.04
Emergency Load Demand (MVA)	N/A	N/A	N/A	N/A	N/A
Delta	N/A	3.2 %	3.2 %	3.2 %	3.2 %
Customer Load Addition (MVA)	0	0	0	0	0
Global Growth Rate (MVA)	0.17	0.18	0.18	0.19	0.19
Load Transfer (MVA)	0	0	0	0	0
Total Growth (MVA)	-0.17	0.18	0.18	0.19	0.19

#### Overloads

Overloads	2009	2010	2011	2012	2013
Normal Overload Count	2	7	8	13	19
Normal Overload Maximum (pu)	1.01	1.04	1.07	1.11	1.14
Emergency Overload Count	N/A	N/A	N/A	N/A	N/A
Emergency Overload Maximum (pu)	N/A	N/A	N/A	N/A	N/A
Normal Low Voltage Count	398	406	428	454	454
Normal Low Voltage Minimum (pu)	0.97	0.97	0.97	0.96	0.96
Normal High Voltage Count	0	0	0	0	0
Normal High Voltage Maximum (pu)	N/A	N/A	N/A	N/A	N/A
Emergency Low Voltage Count	N/A	N/A	N/A	N/A	N/A
Emergency Low Voltage Minimum (pu)	N/A	N/A	N/A	N/A	N/A
Emergency High Voltage Count	N/A	N/A	N/A	N/A	N/A
Emergency High Voltage Maximum (pu)	N/A	N/A	N/A	N/A	N/A

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