



CAPE Protection Simulation Software Overview

Power for Protection Engineers

CAPE software supports the system protection function within electric power utilities. CAPE is used by major utilities in more than 50 countries on six continents worldwide because of its serious tools for detailed modeling that help engineers manage voluminous and complex network data, uncover potential problems, and examine alternative solutions.

Simulating short circuits and showing the responses of protective devices is the heart of CAPE. You use a mouse to click and drag elements on a one-line diagram, and to open breakers, apply faults, and simulate protective system responses. Conducting automated fault studies and wide area coordination reviews, developing incisive custom reports, and identifying fault locations, all become practical, efficient activities that add value to your organization.

More detail gives you more realistic results

CAPE handles networks of any size, large or small. CAPE users have systems ranging from under 100 buses to 10,000 buses. Several have protection systems with 20,000 to 50,000 relays. CAPE's ability to handle rich detail allows users to create models accurate enough to realistically predict likely misoperations. CAPE comes with a library of relays, distribution reclosers, and fuses, all ready to use out of the box.

Get the most from your data

CAPE is built upon a true relational database, which is included with CAPE software. CAPE's underlying DBMS is fully ODBC- and SQL-compliant; therefore, the CAPE database may be accessed with programs like Oracle and Microsoft Access. All of the CAPE modules use the same CAPE database data, so any data item is entered once and may be used many times.

CAPE Package-Standard includes:

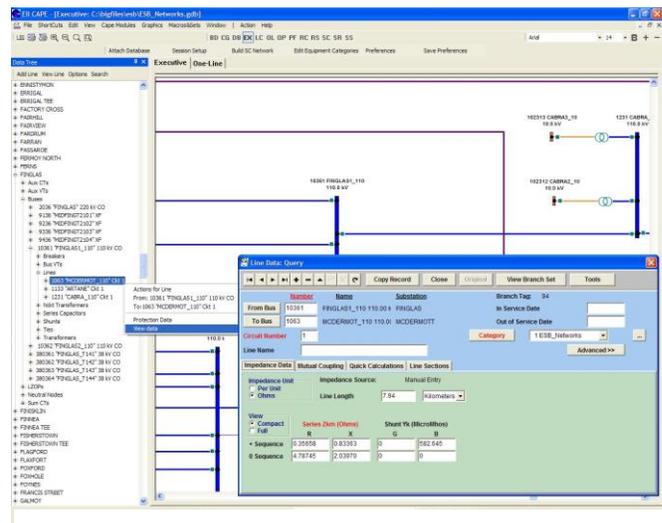
CAPE Database Editor to build and maintain the database of integrated network and system protection models. Special features for easy transformer model building; relay, recloser, and fuse model import; data merging, and quick entry of protection data.

Short Circuit calculates any type of fault on any size system. Supports standard and customized reporting, automated fault studies, fault location analysis, and user-defined fault conditions.

One-Line Diagram for building and maintaining a system one-line diagram and display of data, short circuit, and protection simulation results. Direct access for opening breakers and applying faults.

Coordination Graphics displays overcurrent and distance protective device characteristics. Supports interactive contingency and fault application, graphical relay resetting, and resetting of relay and distribution recloser taps and test points.

Relay Setting represents a company's relay setting procedures as user-written macros that perform fault studies, compute raw relay settings, and select actual taps. A library of "starter macros" is included.



CAPE offers multiple ways to access your data, which is always available throughout all CAPE modules.

Relay Checking provides automated stepped-event simulation of the protection system in response to a variety of fault scenarios. This unique capability allows users to perform wide area evaluation of protection to uncover miscoordinations.

System Simulator performs single-scenario studies interactively with the one-line diagram.

Line Constants computes the self positive-sequence impedance and the self and mutual zero sequence impedances of overhead transmission lines based on conductor and tower data.

Order Production generates data-driven reports on paper of relay settings based on taps and test points for specific locations.

Optional CAPE functions

Power Flow offers both Newton and Fast Decoupled solution methods. Control algorithms support tap and phase-shifting transformers, voltage control by reactive generation, switched capacitor bank operation, and area interchange control.

Short Circuit Reduction offers two types of network reduction; useful for providing reduced models for EMTP calculations, for other “non-CAPE” programs, and for sharing data with a utility’s neighbors.

Settings Transfer Utilities can export settings for any group of relays to one or more Neutral Interface files; settings can be taken to the field and safely viewed and modified by the test engineer, reviewed, annotated, and saved.

Breaker Duty automates the evaluation of breaker interrupting duty following approved procedures of either the IEC or ANSI standards. Streamlines the evaluation of new and existing breakers.

IPS-CAPE Bridge™ provides two-way data exchange between the IPS-RELEX™ protection system data management software and the CAPE protection system simulation environment.

CAPE-TS Link™ Integrates CAPE with transient stability programs (currently Siemens PTI PSS®E), combining the electromechanical transient stability function with CAPE’s detailed protection system simulation.

CAPE’s product experts deliver customized training classes to get you and your team started quickly and confidently.

Electrocon: expertise, stability, and responsiveness...when you need us

Electrocon is a full-service software firm founded in 1981 and dedicated to serving the utility industry and protection engineering. Conversion of your existing electronic data from most popular formats is included with CAPE. Our custom training gets your team started quickly and confidently, and our ongoing technical support is excellent.



CAPE users are part of an active network of protection engineering expertise, worldwide. Annual Users Group Meetings in North America and periodically in Europe provide content-rich opportunities to make connections in person. Our customer forum and independent email group allow even broader connections every day, year-round.

How can CAPE’s power help you?

We’d love to hear from you. Our staff is happy to answer your questions about putting CAPE to work to improve the effectiveness of your protection engineering function. Contact us at eii@electrocon.com or 1-734-761-8612 (1-888-240-4044 toll-free in the US), 8 am-5:00 pm Eastern US time, Monday-Friday.



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