

## What's New in Version 11 of ASPEN OneLiner

The following are the new features in version 11 of *ASPEN OneLiner*<sup>TM</sup>.

1. **Stepped-event analysis.** Given an initiating fault, the program simulates subsequent tripping and reclosing events until the fault is cleared or when no further tripping or reclosing are forthcoming. The results of a stepped-event analysis can be played back on the screen. The simulation logic automatically tracks the buildup of disk position of overcurrent relays, as well as the zone timers of distance relays. There are two stepped-event commands in V11: One for single user-defined event, and another for multiple user-defined events. The latter is designed to simulate evolving faults.
2. **Simulation of communication assisted schemes including DUTT, PUTT, POTT, POTT-PUTT, DCB and custom schemes.** The communication media's transmit and reset time are modeled. The stepped-event analysis will recognize these schemes in a maintenance update to be released in late 2009.
3. **Current-limited generator model.** The fault simulation will enforce limits on generator phase currents. This is done for simulation of wind and solar installations.
4. **Ability to handle networks with unlimited number of buses.** Version 11 has no practical limit on network size. The 30,000-bus limit of previous versions is history. We have also improved the Case Comparison Program and data conversion programs to accommodate the larger file size.
5. **ANSI x/r output in OneLiner.** *OneLiner* gives both the complex x/r ratio and the ANSI x/r ratio for classical fault when the ANSI-x/r-ratio option is turned on in the Faults | X/R Parameters dialog box.
6. **Integration of Batch Short Module and OneLiner:** All the functions in *Batch Short Circuit Module v10* have been moved to *OneLiner*. For the first time, the batch fault-simulation commands will take into account the nonlinear characteristics of MOV-protected series capacitors and the current limits of generator.
7. **Integration of Breaker Rating Module and OneLiner:** Users who have a license for the Breaker Rating Module will get a special version of *OneLiner* that has a Check | Circuit Breaker Short Circuit Rating command that has all the functionalities of the old Breaker Rating Module program. We will stop shipping the *Breaker Rating Module* as a separate executable file. The integration with *OneLiner* allows the breaker-rating logic to take into account the nonlinear characteristics of MOV-protected series capacitors and the current limits of generator.
8. **Enhanced breaker connection model for breaker rating applications:** Users can specify additional branch outages to be applied in breaker fault current calculation to simulate complex substation configurations where bus may become segmented in fault clearing. There are also new reclosing options: 1) separate setting for each protected equipment groups; 2) reclosing in faults in front of breaker only.
9. **Memo field in the dialog box of all the network and relay dialog boxes.** A memo allows you to enter notes with up to 512 characters. V11 will automatically convert any text you have entered in the Comments field of bus, relay-group, and relay dialog boxes to the new Memo fields. In addition, we added memo fields to other network and relay objects that previously had no Comments fields.

10. **Tags for all network and relay objects.** A tag is a short character string. You can assign one or more tags to each object for the purpose of data management. A number of commands in V11 let you manipulate objects by tags. For example, you can ask the program to take out of service all network and relay objects that has the tag “ABC”.
11. **Improved Phasor Probe.** You can open up to three phasor panels at the same time to monitor the phasors on three different network elements. The phasor panels in V11 are modeless, meaning that you can manipulate the one-line and execute command while they are open. The phasor panels remains on the screen until you close them.
12. **New manufacturer-specific distance relay models for GE D60, Areva P437, P443, ABB REL 511, REL 521 REL 531, ZR20 and others.** More are coming.
13. **Outage of 3-winding transformer:** The program opens all three terminals of the 3-winding transformer when the user asks to outage the transformer in a fault simulation.
14. **Ability to change the bus-symbol length by dragging either end of the symbol.** Previously users could drag only the bottom end of a vertical bus symbol, or the right-most end of a horizontal symbol.
15. **New voltage-restrained and –controlled phase overcurrent phase relays.**
16. **New “Signal-only” option for the instantaneous and time element of overcurrent relays.** The output of the signal-only elements is used only for communication assisted schemes.
17. **New “Signal-only” option for all the zones of distance relays.**
18. **New impedance-correction table for phase shifters.** The impedance correction table has up to 11 breakpoints to take into variation of impedance as a function of the shift angle.
19. **Allow vertical text for display of currents, voltage and impedances on the one-line diagram.** Users can turn on this feature in the dialog box of the Diagram | Options command.
20. **Simulation of breaker interrupting time:** A new “breaker interrupting time” parameter is available in the relay-group dialog box to allow simulation of the delay cause by breaker openings in stepped-event analysis.
21. **New “Start zone-2 timer on forward zone-3 or zone-4 pickup” option for distance relays.** This parameter is used for stepped-event analysis involving distance relays whose zone-2 timer starts whenever a forward zone 3 or zone 4 is picked up.
22. **Enhanced data browser:** Users can apply additional data selection criteria to filter out records they do not want to see in the browser. The Delete and In/Out of Service command can now be apply to selected record as well as to all records being displayed. We also added a new “Impedance correction Tables” page to the Data Browser.
23. **Improved voltage-drop analysis feature with fault-clearing time as an output.** The fault clearing time is computed using the stepped-event analysis logic. This feature will be available in a maintenance release in late 2009.
24. **PTI PSS/E version-31 format** is supported both in *OneLiner’s* File | Export | Network Data command and in the PSS/E-to-ASPEN Data Conversion Program.
25. **The ANAREDE format** is supported both in *OneLiner’s* File | Export | Network Data command and in the ANAREDE-to-ASPEN Data Conversion Program. ANAREDE is a popular power-flow data format in Brazil.
26. **The GE PSLF and GE Short Circuit export options** were combined in the File | Export | Network Data dialog box as simply “GE format”.

27. **Hyperlinks in TTY Window.** You can see the hyperlinks -- which are blue -- when you press the <Ctrl> key while the TTY Window is on top. Pressing on the hyperlink of a bus will take you to the location of that bus on the one-line diagram, for example.
28. **The Change System Base MVA function** has been moved to dialog box of the Network | Options command.
29. **New CSV format option in the Faults | Solutions Reports command.**
30. **New CSV format for batch short circuit text report.** All you need to do is to name the output file with a .CSV extension within the batch command file.
31. **Multiple reports for a batch short circuit run.** The program starts a new report file whenever it encounters a new OUTPUT specification line with a different output file name in the batch command file.
32. **Voltage-sag report is available in CSV format only in V11.** We eliminated the text report format.
33. **New Voltage Sag | Run Batch command.** This command lets you study in batch mode the voltage variations at voltage-sensitive customers' buses caused by short circuits in the vicinity. The input to this command is a batch voltage-sag file (a text file with .txt extension) that contains a list of monitored buses.
34. **Improved report for the Ground Current Calculator.** The report shows the total ground current for the case when the fault is on the ground mat and for the case when the fault is just outside the ground map.
35. **Improved Bus Fault Summary report.** The report now shows both the phase current and the ground current for each of the four fault types. In addition the report shows the maximum phase and ground currents at each bus.
36. **New cursor position display in the OC Curves Window and the DS Relays Window.** The cursor position is shown next to the mouse when the mouse button is down. Previous versions show the mouse position at the lower left corner of the window.
37. **Support for additional parameters in PowerScript 'SetData' function:** User can use this function to make changes to network data and relay setting that were read-only in previous versions of OneLiner.

# Installing ASPEN OneLiner Version 11

To install *OneLiner* Version 11 on your PC, all you need to do is to:

**1. Backup your data, just in case.**

**2. Run d:\1LPF\setup, assuming d: is the CD drive on your PC.**

The setup program will create a directory on your hard disk and copy the program files there. The program directory is C:\Program Files\ASPEN\1LPFv11 by default.

A folder named “ASPEN OneLiner V11” and a shortcut name OneLiner will be created under Windows Start | All programs menu.

The setup program will also create a directory (called the Overcurrent Relay Library Directory) on your hard disk and copy all the .RLY files there. The default Overcurrent Library Path is C:\ASPEN1L\_LIB.

## Version 11 Installation Questions and Answers

**Q: *OneLiner* complains that “Hasp Key not found” when I start up the program.**

**A: There are two possible causes.**

- 1. You are still using parallel-port keys.** We will swap your parallel-port keys for the new USB keys, free of charge. Please contact ASPEN’s tech support.
- 2. Your network-key initialization file needs to be copied to the new program directory.** If you are accessing the program key through your LAN, please try copying the file NETHASP.INI from the V10 program directory (usually C:\ASPEN05) to the V11 program directory (usually C:\Program Files\ASPEN\1LPFv11).

**Q: Do I need Windows Administrative Privileges to setup version 11?**

**A:** The answer is ‘Yes’ if you are installing the *OneLiner* Program on the PC for the first time. You do not need Administrative Privileges if you are upgrading from version 10. Simply press ‘Cancel’ when the setup program tells you that it is going to install the key device driver. The driver for version 10 should work fine for version 11.

**Q: Do I need to remove my existing *OneLiner* version 10?**

**A: It’s recommended that you uninstall *OneLiner* Version 10 from the computer before running *OneLiner* Version 11.** If you do decide to run both versions, please be aware that files that you save in *OneLiner* version 11 may not open correctly in version 10 of the program.