

What's New in Version 11 of *ASPEN Power Flow*

The following are new features in version 11 of the *ASPEN Power Flow*.

1. **Ability to handle networks with unlimited size.** Version 11 has no practical limit on the 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.
2. **New contingency study commands:** We have improved the PFlow | Contingency Batch Cases command for speed, reliability and ease of use. An important change in V11 is that you must simulate a base case prior to simulating contingency cases. This enables the program to start each contingency case from the base-case solution.
3. **Batch case files for N-1 contingency cases.** The PFlow | Contingency Batch Cases command has the ability to create contingency batch case files for N-1 studies that involve branch, generator and bus outages.
4. **Allow multiple system slack buses when there are islands connected by dc lines.** A system slack bus is required in each island. You can make a generator bus a system slack bus by marking the “Power flow slack bus” check box in the bus properties dialog box.
5. **New “ganged” option for load tap changers.** A new “ganged” option on the LTC dialog box allows you to simulate multiple LTCs that move in unison to control the same bus voltage.
6. **New “adjustment priority” for load tap changers.** You can assign a “normal”, “medium” or “high” priority to each LTC. In each power flow iteration, the program adjusts the high-priority LTCs first. It then updates the voltages solution for all the buses before adjusting the medium-priority LTCs, and so on. This feature is designed to handle cases in which a group of closely coupled LTCs must be adjusted in certain order.
7. **New “Stagger automatic control adjustments” option.** Normally the different automatic controls are adjusted one after the other during a power-flow iteration. If this option is turned on, the program will adjust only one type of control (e.g., LTCs) for a number of iterations until they are within limits before adjustment another type of control (e.g., generator remote voltage controls). The program will revert to the normal adjustment sequencing only after all the control types have been adjusted independently.
8. **Improved handling of non-convergence.** The program gives you three options when the power flow fails to converge: (1) Stop now, (2) Continue with automatic controls, and (3) Continue without automatic controls. It also lets you turn on the Solution Monitor which lists the automatic controls that are being adjusted in each

- iteration. We also added a section (Section 7.5) in the on-line help that advises you on what to do if the power flow does not converge.
- 9. Ability to limit automatic adjustment to equipment within certain areas.** This feature is especially useful when the data is from a solved case (e.g., from a PSS/E raw file) and your company's territory is a small part of the network.
 - 10. 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 and relay-group dialog box to the new Memo fields. In addition, we added memo fields to other network objects that previously had no Comments fields.
 - 11. Tags for all network 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 objects that has the tag "ABC".
 - 12. New "Changed" column in various pages of the Solution Browser.** The Changed column shows the changes made by the automatic-control logic. For example, for a transformer LTC, the change column shows the tap position at the beginning and at the end of the power flow simulation.
 - 13. 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.
 - 14. 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.
 - 15. 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.
 - 16. PTI PSS/E version-31 format** is supported both in *Power Flow's* File | Export | Network Data command and in the PSS/E-to-ASPEN Data Conversion Program.
 - 17. The ANAREDE format** is supported both in *Power Flow'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.
 - 18. The GE PSLF and GE Short Circuit export options** were combined in the File | Export | Network Data dialog box as simply "GE format".
 - 19. 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.

20. **The Change System Base MVA function** has been moved to dialog box of the Network | Options command.
21. **The fast-decoupled solution method has been eliminated.** We have found that the Newton-Raphson method is more robust and about just as fast as the fast decoupled method.
22. **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.
23. **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.

Installing ASPEN Power Flow Version 11

The enclosed CD-ROM can be used to update an existing installation or to make a new installation. To install the *Power Flow* program on your PC, all you need to do is to:

1. **Backup your data, just in case.**
2. **Run d:\PF\setup, assuming d: is the CD drive on your PC. Answer ‘Yes’ when the setup program asks you whether you wish to backup existing files.**

By default, the setup program will create a directory at c:\Program Files\ASPEN\PFv11 on your hard disk and copy the program files there. It will also create a folder named “ASPEN Power Flow v11” under the Start | All Program menu.

Version 11 Questions and Answers

Q: *Power Flow* 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:\ASPENPF05) to the V11 program directory (usually c:\Program Files\ASPEN\PFv11).

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

A: The answer is ‘Yes’ if you are installing the Power Flow 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 driver. The driver for version 10 should work fine for version 11.