PSS/E’s next release, Revision 30, will be making strides into the latest technology introducing a new user interface for load flow. Based on Windows technology this interface capitalizes on providing easy to use tools for managing network data, one-line schematics and load flow results.

Figure 1 – Power Flow
New Initiatives on the PSS/E Front

PV and QV Curves

Simplify the time consuming, error prone task of determining real power transfer, load level limit, and reactive requirement/margin by using the new PV and QV analysis features in PSS/E-30. PV analysis investigates the maximum power transfer (or load supply) level before voltage collapse. QV analysis finds the minimum amount of reactive power required to avoid voltage collapse. Both options require running many power flow solutions and recording and plotting of results.

![PV analysis - results (C:\class\pg\pv).

Figure 2 – PV Analysis]
Figure 3 – QV Analysis
Python Scripting

Using the latest technologies for automated scripting, PSS/E is introducing a new scripting language called Python for program automation processing. We are not removing the capabilities of IPLAN or response (IDEV) files but are adding in additional power for those users wishing to capitalize on the latest technology trends.

The command line interface to PSS/E-30 will accept response file input, command line input, and Python scripts.

![Figure 4 – Command Line Interface](image)

All about Python?

Python is an interpreted, interactive, object-oriented programming language. It is often compared to Tcl, Perl, Scheme or Java. Python combines remarkable power with very clear syntax. It has modules, classes, exceptions, very high level dynamic data types, and dynamic typing. There are interfaces to many system calls and libraries, as well as to various windowing systems (X11, Motif, Tk, Mac, MFC). New built-in modules are easily written in C or C++. Python is also usable as an extension language for applications that need a programmable interface.

The Python implementation is portable: it runs on many brands of UNIX, on Windows, OS/2, Mac, Amiga, and many other platforms.

The Python implementation is copyrighted but freely usable and distributable, even for commercial use. Visit www.python.org for more valuable information.
Learn More about Python and PSS/E

Want to learn more about Python and how to use it in PSS/E? The first course “Unleashing the Power of Python Programming” will be held June 9-10, 2004 in Las Vegas, Nevada in conjunction with the PSS/E user’s group meeting. This course is intended to broaden your knowledge on how to deal with this new and powerful scripting language for PSS/E and how to improve productivity using the latest tools and concepts.

Wind Energy

Shaw PTI has been developing wind farm and wind turbine models for several manufacturers. The GE 1.5 MW 60 Hz model is available and posted to the PSS/E web page for download. This model is supported for PSS/E Version 28 and 29 on the PC and all UNIX platforms. We are currently updating this GE model and hope to post an update to the web page in the near future.

Additionally, we have received permission to make public the following models:

- GE 3.6 MW 60 Hz
- Vestas V80
- Vestas V47

Educating PSS/E Users Online

Everyone knows Shaw PTI is committed to education. Now we are broadening our commitment by providing training on the World Wide Web. We are pleased to announce our first e-Learning (electronic learning) course: Power Flow and Steady State Analysis for PSS/E users.

This course was developed by Shaw PTI’s sister company, Shaw Web Technologies, a leader in the e-Learning industry [www.shawwebtech.com](http://www.shawwebtech.com).

Shaw PTI's e-Learning courses will be delivered through the Internet. How does that benefit your organization? Think about it in these terms, online learning is:

- **Non-linear** - The training can be taken in any order. Participants can skip or review material as they desire.
- **Self-paced** - The learner determines the timing and duration of their training sessions.
- **Convenient** - The training is accessible anywhere with an Internet connection, 24/7.
- **Interactive and engaging** - Learning is enhanced with a high level of interactivity, including hands-on simulations of PSS/E-29 software with audio narration.
- **Flexible** - Busy people can fit their training in to suit their schedules.

Studies have shown that e-Learning can help employees learn faster, retain more knowledge, and make them productive more quickly than other training methods.

Power Flow and Steady State Analysis e-Learning Course

This course for PSS/E users provides a comprehensive description of the program interface and activities. The training enables users to perform detailed steady-state network studies involving power flow analysis, network constraints, short-circuit analysis, equipment ratings, and economic evaluations of market related issues.
Modules 1 and 2 are currently under development. These modules are described below.

![Power Flow & Steady State Analysis e-Learning Course](image)

**Figure 5 – PSS/E e-Learning Modules**

**MATLAB-Simulink PSS/E Interface**

We are currently working on the development of a MATLAB-Simulink PSS/E interface to become a standard feature of PSS/E-30. This interface provides a mechanism for PSS/E and the MATLAB-Simulink model to communicate and exchange data.

Our goal is to allow users to create MATLAB models of AVR and Governors and interface it directly with PSS/E. In effect, instead of having to write code (in FLECS or FORTRAN as is traditionally done in PSS/E) for user models of AVR and Governor one would be able to wire-up the model in MATLAB-SIMULINK.