CURTISS-WRIGHT

Curtiss-Wright Nuclear Division

Announces New Version Release

PEPSE

Version 81

September 30, 2016

Curtiss-Wright Nuclear Division is excited to announce the release of the new version of Scientech's PEPSE on September 30, 2016. The Version 81 release includes many new features and enhancements as requested by our clients and end users. These improvements are designed to make PEPSE's use more efficient while increasing its capabilities and making PEPSE the most powerful predictive analysis tool on the market.

New challenges are facing performance engineers as they address increasing pressure to define the best performance achievable for existing power generation assets as well as evaluating equipment and process changes that may require justification and a commitment of capital expenditures. With the release of Version 81, PEPSE continues to be the industry bench mark for optimizing power plants' thermal efficiency. This has been proven by the selection of PEPSE by many utilities in its ability to realize improved heat rate goals. These goals are driven by the Clean Power Plan, the New Age market's evolution to inexpensive gas and renewables, capacity marketing, ISO competition, and other asset management considerations such as aging assets and workforce.

PEPSE's Version 81 provides engineers with the ability to readily and accurately analyze and optimize a system's efficiency, and the plant operation derives a number of direct and important benefits. PEPSE is your key to accurately analyzing plant performance and identifying ways to increase generation and reduce heat rate. PEPSE helps to eliminate causes of inefficiency allowing a plant to produce every possible kilowatt and conserve every possible BTU thus providing for reductions in plant emissions and carbon footprint. This also lowers operating costs through higher efficiency, fewer repairs, less down-time, and lower fuel costs.

PEPSE program enhancements have been improved to enhance its ease of use, e.g., speed, reporting capabilities, displays/graphics, data reduction, help functionality, error corrections, and "user friendly" operation. These enhanced features complement its business value for a complete performance improvement program.

PEPSE V81 Enhancement Summary

PEPSE upgrades are implemented to enhance user productivity and introduce the latest calculation standards as provided by the power production industry. Outlined below is a summary of several of the major features of Version 81.

PEPSE Program Enhancements

- ➢ The calculation speed of formulas in operations has been improved significantly.

- ➢ An X/Y plot of sensitivity study (macro) results is created at the end of the run.

- ➢ X/Y Plots of results on the special output grid and output variable grid can be created quickly using any two variables on the grids.

- ➢ The data in a schedule can now be easily plotted, either for a single schedule or all schedules in a model.

- ➢ Components (e.g., splitters, mixers, pumps) can be inserted into a stream by simply right-clicking on the stream and selecting the type of component.

- ➢ Streams can be easily split using "connector" icons.

- ➢ The selection of stream types for active streams has been improved to include definitions of the stream types.

- ➢ The help functions now use the PEPSE documentation (PDF files). Links to all PEPSE documentation have been added to the help menu.

- ➢ The gas turbine engine fuel composition and heating value inputs can now be modified using special features (operations, controls, etc.)

- ➢ The format of results tooltips has been changed to enhance readability.

- ➢ Results tooltips have been added for the MSR, turbine, and condenser super-components.

- ➢ The engineering unit's symbols (e.g., "P" for pressure, "M" for flow rate) for SI and metric results on the schematic can now be modified.

- ➢ The grid size of the snap-to-grid feature can now be modified.

- ➢ The component results window is now resizable.

- ➢ The preview function in Windows Explorer will show the version of PEPSE that was last used to save a PEPSE model.

PEPSE Error Corrections

- ➢ Some special features did not correctly interpret sub-freezing temperatures when SI or metric units were used for input.

- ➢ In some models, psychrometric properties were not calculated correctly with sub-freezing temperatures when SI or metric units were used for input.

➢ The gas turbine engine component did not shut off an external fuel source when the gas turbine was taken out of service.

➢ Streams could not be connected to the steam outlet ports on the drums of a HRSG when the height of the HRSG component icon was decreased.

➢ The gas outlet temperature displayed on a HRSG component was incorrect when the last stage of the HRSG was split into two economizers.

➢ The results tooltip for a HRSG stage would sometimes show results for a different stage.

➢ The reference temperature input on the HRSG form did not show the correct engineering units when SI or metric units were selected for input.

➢ The special output table was not written to the output file when SI or metric units were selected for output.

➢ Variable names for values at the inlet to streams were not interpreted correctly by formulas in operations.

➢ The variable trace feature did not work on some input forms.

➢ The cooling tower component would not use more than five (5) wet bulb temperatures in the CTI method.

➢ In some models with multiple cases, a change in the fuel constituents on a source or the constituents on a constituent separator would cause a failed case during the run.

PEPSE Version 81 will run on Windows 7 and newer operating systems; and Windows Server 2008 and newer operating systems, including 32-bit or 64-bit versions.

To upgrade to PEPSE Version 81 or to receive more information, contact Bob Holzworth or James Brower. We look forward to working with you and continuing to provide the most powerful off-line thermal performance modeling tool available. Upgrading to Version 81 will provide enhanced functionality of the leading performance analysis and simulation tool, PEPSE, and demonstrate a valued return on your investment.

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