CSiPlant v8.0.0 Release Notes

Notice Date: 23-March-2023

This document lists changes made to CSiPlant since v7.2.0, released 07-September-2022. Items marked with an asterisk (*) in the first column are more significant.

Analysis

Enhancements Implemented

*	Ticket	Description
	9092	The following enhancements have been made to the analysis messages, as shown in the Analysis .LOG file, the Analysis Messages form, and the table "Analysis Messages": (1.) The affected element type and element name are now given whenever applicable. (2.) The Windows system error message text is now given for file IO errors. (3.) The “Results deleted” informational messages are no longer shown for either user-initiated or internal operations that would cause the results of a load case to be deleted. These messages were correct, but sometimes caused confusion, when load cases were automatically re-run due to an iterative process like finding the structural period to use for auto-wind or auto-seismic load cases.
*	9093	A change has been made to the Analysis Log form that can be displayed when the analysis is running: (1.) When displayed, the Analysis Log form will always remain in front of the main graphical user interface, and (2.) When the main graphical user interface is minimized/restored, the Analysis Log form is also minimized/restored with it.

Design – Piping

Enhancements Implemented

*	Ticket	Description
*	9287	An enhancement was made adding B31.1-2022 as an available design code. The key design difference from B31.1-2020 is: For sustained and occasional design checks, the axial SIF (I_a) is applied to both the internal axial force of the pipe and the longitudinal pressure stress, thus I_a*|PD/4t+F/A| vs. the previous equation |PD/4t+I_a*F/A|. See equation (15) and (16) in Section 104.8 for the full code equations.

Drafting and Editing

Enhancements Implemented

*	Ticket	Description
*	9392	A new feature was implemented allowing users to slide existing components and supports along, or between, pipelines. Slide mode can be activate either through the "Edit > Slide Component/Support" command or through the Draw quick action tool strip, opened using the "R" key. Once activated, components and supports can be slid using a left-mouse drag. Once the left mouse is released the component/support will be moved to the snapped location. While sliding a component, the "z" key can be used to cycle between Start, Mid, and End Object Offsets. Slide mode can be deactivated by either pressing the Escape key or activating another mode, such as select.

External Import and Export

Enhancements Implemented

*	Ticket	Description
	9324	The following issues were resolved for the import of CAESAR Neutral Files: (1) Importing CAESAR Neutral File v12 with uniform load data block failed. (2) No temperature, pressure and uniform loads were imported for valves and flanges. (3) Incorrect unit conversion was applied to uniform loads with G flag value of 1, which is used to indicate that the uniform loads are specified as multiplier on gravitational force. Uniform loads with G flag value of 0, which is used to indicate that the uniform loads are specified directly in force/length units, were not affected.

Installation and Licensing

Enhancements Implemented

*	Ticket	Description
*	8903	The version number has been changed to v8.0.0 for a new major release.

User Interface

Enhancements Implemented

*	Ticket	Description
	7817	The "Formatted Report" option for the export of a CSiPlant model to a text file has been enhanced as follows: (1) The pipes are now grouped by pipeline and reported in a sequence that follows the flow direction along each pipeline. (2) More detailed data are now reported for each pipe directly under the pipe ID and are grouped under the following categories: (a) Geometry: DX, DY and DZ dimensions between the two end joints of the pipe. For elbows and tees, DX, DY and DZ to points on adjacent objects are now reported from the Elbow TIP and Tee Center Point, (b) Pipe data: pipe material, pipe cross-section dimensions and pipe property set data, (c) Point data: coordinates of pipe end points, (d) Discrete and distributed support, (e) Design properties: pipe tolerance and material allowance, (f) Pressure load, (g) Temperature load. (3) Additional properties specific to components, such as elbows, tees, flanges, valves and reducers are now also reported.

Analysis

Incidents Resolved

*	Ticket	Description
*	8931	An Incident was resolved where designing a model would run the <Base> result set for all load cases included in a design request, regardless of whether the design request was set to run. The new behavior only runs <Base> result set for load cases that are included in design requests set to be run. Also corrected was an issue on the "Display Design Results" form whose design request drop-down list could include design requests that were not run. Selecting such design requests and trying to graphically display their design results would display a blank window. The updated behavior is such that the design requests drop-down list is only populated with design requests that were run and successfully completed.
*	9004	An incident was resolved where running multiple linear load cases using the stiffness of multiple (different) nonlinear load cases in parallel could cause an abnormal termination of the software during analysis, which would then cause the analysis results to be lost. When this did not occur, available results were correct and unaffected.

Design – Piping

Incidents Resolved

*	Ticket	Description
	9029	An incident was resolved related to DCR contour display when a tee was defined with a branch length that was shorter than the main-pipe radius. In the previous releases, when this condition was encountered the DCR contour plot did not display any contours for any objects. The updated behavior skips the contours plot on the problematic tee object, allowing all other objects to be plotted. In addition, warning messages are added to the Model Checker and to the Design logs notifying the user of the specific tee object(s) that meet the condition where the branch length is less than main-pipe radius.

External Import and Export

Incidents Resolved

*	Ticket	Description
*	8955	The following enhancements and bug fixes were implemented for PCF import: (1) The PCF import metric mapping files specified outside pipe diameter instead of nominal pipe size. They have been corrected to use nominal pipe size. (2) Enhanced the PCF Import Options form by adding buttons to remove all mapping files, load metric mapping files and load English mapping files. (3) Added option to consolidate pipe sections when importing from multiple PCF files. If the option is not used separate pipe sections are created for each nominal pipe size from each PCF file. If the option is used, single pipe section is created for each nominal pipe size that is used in one or multiple PCF files. (4) Separate coordinate grids are no longer created for each imported PCF file. (5) An issue was corrected where importing from multiple PCF files would apply the mapping for pipe sections only to the first imported PCF file. (6) Provided an option to use either English or metric display units in the CSiPlant model created by PCF import. (7) The PCF import was enhanced such that a drawing error for a single imported PCF component will not prevent the import of the remaining PCF components. (8) Adjacent flanges are now oriented such that the flange collars are adjacent to each other.

Miscellaneous

Incidents Resolved

*	Ticket	Description
	8948	An Incident was resolved where the "Support Properties - Vertical Stop" table showed a letter for support type instead of the actual support type.

Structural Model

Incidents Resolved

*	Ticket	Description
*	9216	An incident was resolved where drawing an expansion joint on a pipe whose material was using a thermal expansion curve from library would inadvertently set all thermal expansion coefficients for the corresponding library curve to zeros just before the analysis was run. Materials with custom thermal expansion curves were not affected.