What's New

PV Elite and CodeCalc 2016
(Version 18.00.00)

Intergraph Corporation

305 Intergraph Way

Madison, AL 35758

Phone: +1.256.730.2000
Toll Free USA: +1.800.345.4856
Fax: +256.730.2048

This document details the technical changes and new features included in PV Elite and CodeCalc 2016 (Version 18.00.00).

Technical Changes in PV Elite and CodeCalc 2016

The following list details changes to PV Elite and CodeCalc (Version 18.00.00), which may affect the numeric results:

Calculation Updates

- Fixed an issue in PV Elite regarding the calculation of occasional allowable stresses according to EN 13445. The software now computes the stresses in accordance with Section 22. The software no longer considers an allowance for the occasional load factor of 1.2.

New Features in PV Elite and CodeCalc 2016

The latest PV Elite and CodeCalc releases deliver a number of significant new and extended capabilities in response to current market requirements, as well as direct feedback from the growing PV Elite/CodeCalc user community. The following changes have been made to PV Elite and CodeCalc.

PV Elite and CodeCalc 2016 (Version 18.00.00.0000)

Code Updates

- Updated to support the 2015 ASME Section VIII code.
- Updated to support the 2015 IBC code.
- Updated to support the 2015 PD 5500 code.
- Updated to support the 2013 ANSI B 16.5 code.

Documentation

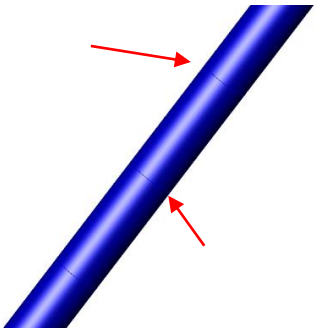
- Updated the documentation in PV Elite to clarify that the nozzle flange is considered in **Flange Distance to Top**.
- Updated an image in the PV Elite documentation to be more accurate. Previously, the image in the **Straight Tube Length Measured Between** topic incorrectly illustrated the length of the outer faces extending to the end of the tube. The image has been updated and correctly illustrates the length of the outer faces ending at the tubesheet.
- Updated the PV Elite QA Manual to reflect the benchmark analysis results based on the 2015 ASME code updates. In addition, the manual now contains the 3D model and full-size output report for the example problems.

Configuration

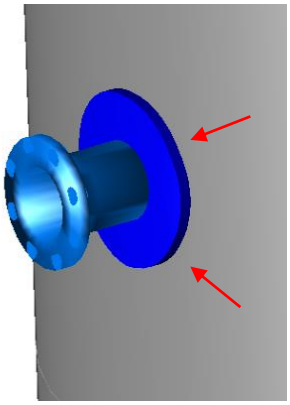
- Updated PV Elite by adding an option to separate the foundation load information. Previously, the software only displayed basering and foundation load information on the **Vessel Design Summary** report. You can now select **Foundation Loads on a New Page** on the **Configuration** dialog which will result in the basering and foundation load information displaying on the new **Foundation Support Summary** report. A new **Basering Cross Section View** sketch also displays on both the **Vessel Design Summary** report and **Foundation Support Summary** report.

Graphics

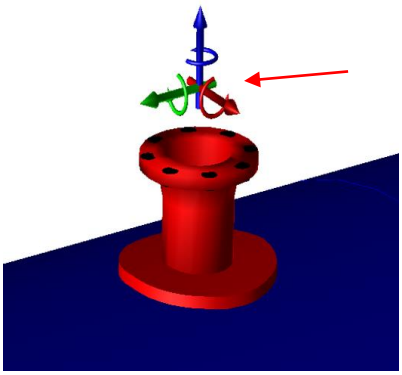
- Updated PV Elite to improve the graphical representation of thin expansion joints.
- Updated PV Elite to display seams between multiple elements of the same type on the 3D model.



- Updated PV Elite to display the repad for nozzles on the 3D model.



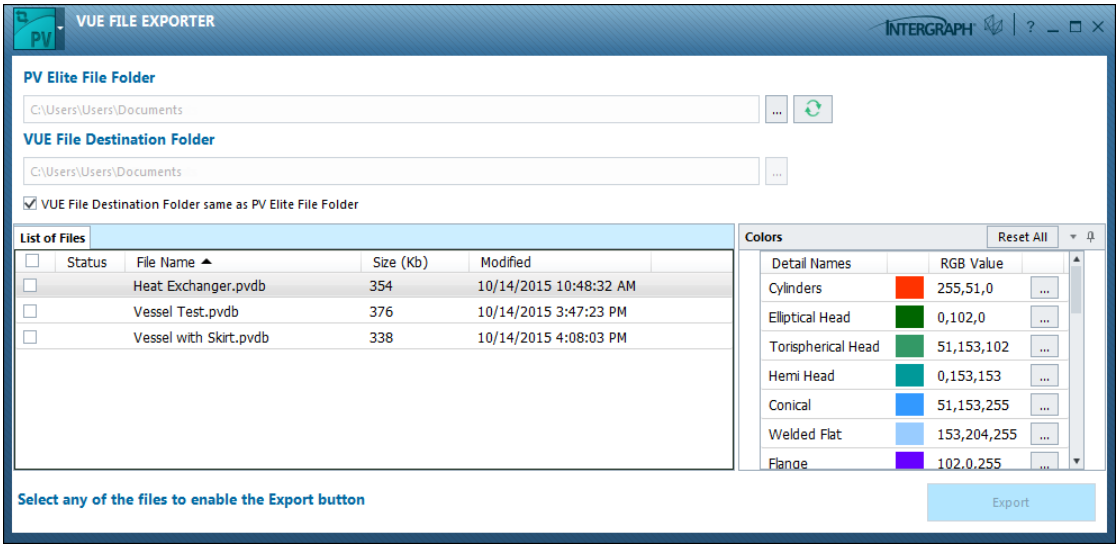
- Updated PV Elite by adding a graphical representation of loads on nozzles on the 3D model.



Input Processor

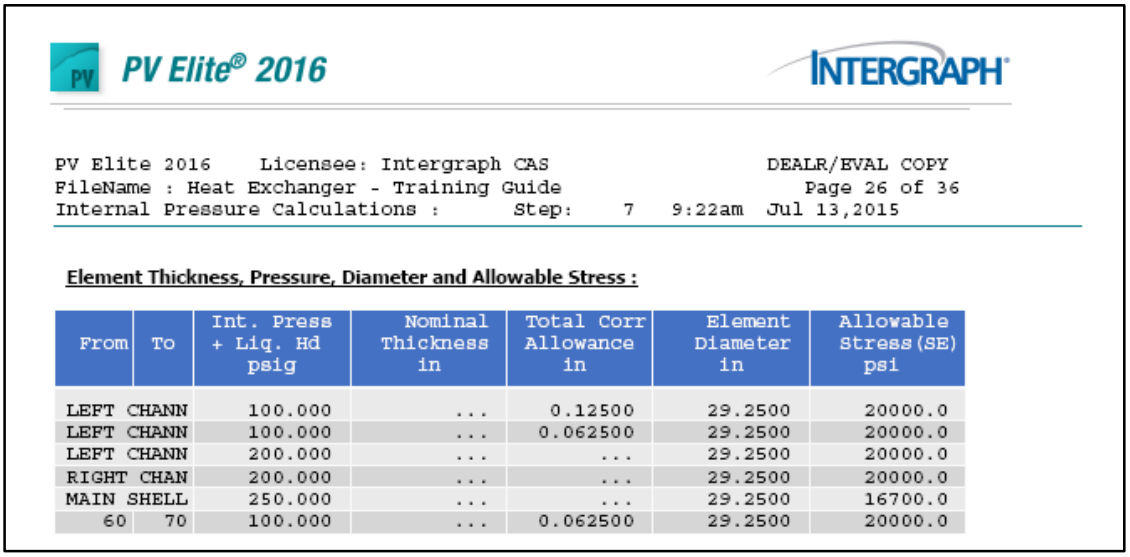
- Updated PV Elite by adding new inputs on the **Seismic Data** tab that allow for additional factors to be considered during seismic analysis. The new inputs, **Consider the Rotational Force Effect**, **Site Velocity**, **Specification Factor**, and **Site Factor** allow for rotational forces to be calculated when performing seismic analysis according to the **Mexico Sismo (2008)** seismic design code.
- Updated PV Elite by adding an additional hydro-test option for ASME Division 1. A new **App. 27-4** option was added to **Hydrotest Type** on the **Design Constraints** tab. This new option allows you to test that glass-lined vessels meet the requirements of Appendix 27-4 of ASME Division 1.

- Updated PV Elite by having the software recognize all creep range temperatures for applicable materials. Creep range temperatures for a material now display in red on the **Material Properties** dialog.
- Updated PV Elite and CodeCalc by adding fields for the minimum and maximum operating pressures for the shell and channel sides of a tubesheet. As a results of the ASME 2015 code updates, **Maximum Operating Pressure for UHX** and **Minimum Operating Pressure for UHX** were added to the **Load Cases** tab of the **Heat Exchanger Tubesheet Input** dialog box in PV Elite. **Shell Maximum Operating Pressure**, **Shell Minimum Operating Pressure**, **Channel Maximum Operating Pressure**, and **Channel Minimum Operating Pressure** were added to the ASME Tubesheet module in CodeCalc.
- Updated PV Elite by adding options to select and deselect all the nozzles on the **Change Nozzle Materials** dialog. Previously, users had to manually select each nozzle in the **Exclude Nozzle** section. The software now contains **Select All** and **Unselect All** options below the **Exclude Nozzle** section which allows user to quickly select or deselect all the nozzles in the list box.
- Updated PV Elite to include fields for drawing and revision information about the PV Elite model. The new fields, **Reference #**, **Revision #**, **Client Name**, **Drawing #**, and **Contract Date** were added to the **Heading** tab. The information entered in the new fields displays on the cover page of output reports.
- Updated PV Elite to allow you to calculate the effective wind diameter using only a few inputs. The new **Special Effective Wind Diameter** dialog contains inputs that allow you to easily calculate the wind diameter for a vertical column, making it quicker to determine the foundation loads necessary for the structure.
- Updated PV Elite by allowing you to analyze weld neck flanges as sump items. When adding a body flange, you can select the **Sump Head** check box in the **Additional Element Data** section of the **General Input** tab to designate the flange be the sump of a selected nozzle.
- Updated PV Elite by adding a .vue file exporter utility. Users can now select **Export to VUE Format** on the **Tools** tab to open the **VUE File Exporter** utility. This utility allows users to convert their PV Elite .pv files into .vue files. Users can then open and review the PV Elite vessel in Smart Plant Review.



Output Reports

- Updated PV Elite by adding a warning message during analysis when the user-defined MAWP is greater than the computed MAWP by PV Elite. If you enter a value in **User Defined MAWP** that is greater than the MAWP calculated by PV Elite, a warning displays upon running the vessel analysis as well as on the **Internal Pressure Calculations** report. The warning message explains that the software uses the user-defined MAWP in calculations instead of the MAWP calculated by the software.
- Updated PV Elite by allowing output report data to display in formatted tables. For data that displays in columns on the output report, users can now select **Render Tables** on the **Options** tab of the Output Processor to display the data in formatted tables. Users can also customize the heading and body color of the formatted tables.



PV Elite® 2016

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Internal Pressure Calculations : Step: 7 9:22am Jul 13,2015

Element Thickness, Pressure, Diameter and Allowable Stress :

From	To	Int. Press + Liq. Hd psig	Nominal Thickness in	Total Corr Allowance in	Element Diameter in	Allowable Stress (SE) psi
LEFT CHANN		100.000	...	0.12500	29.2500	20000.0
LEFT CHANN		100.000	...	0.062500	29.2500	20000.0
LEFT CHANN		200.000	...	...	29.2500	20000.0
RIGHT CHAN		200.000	...	...	29.2500	20000.0
MAIN SHELL		250.000	...	...	29.2500	16700.0
60	70	100.000	...	0.062500	29.2500	20000.0