



What's New

PV Elite and CodeCalc 2017
(Version 19.00.00)

© 2016 Intergraph Corporation. All rights reserved. Intergraph and the Intergraph logo are registered trademarks of Intergraph Corp. or its subsidiaries in the United States and in other countries. Other brands and product names are trademarks of their respective owners.

The content of this document is proprietary work of Intergraph Corporation, or relevant third parties, and is protected by copyright law and international treaty. Any use, duplication, distribution or disclosure of such, other than as specified herein, is unauthorized and in violation of applicable copyright law and international treaty. All rights in content or materials bearing copyright notice or other attribution of third party rights are reserved to the relevant third party. United States Government license rights are limited to those mandatory rights identified in DFARS 252.227-7015(b).

Intergraph may make improvements and/or changes in the products and/or the programs described in this publication at any time without notice.

Any content or materials supplied hereunder are provided "as is," without warranty of any kind, either expressed or implied, including, but not limited to, any implied warranties of merchantability, fitness for a particular purpose, or against infringement. In no event shall Intergraph be liable for any damages arising out of, or in connection with the downloading, viewing, use, duplication, distribution or disclosure of any content or material published by Intergraph, including but not limited to any direct, indirect, incidental, special, punitive or consequential damages, or loss or corruption of data.

Some jurisdictions do not allow the exclusions or limitations set forth above, so the above may not apply to you. The exclusions or limitations shall apply in all jurisdictions to the maximum extent allowed by law.

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 2017 (Version 19.00.00).

New Features in PV Elite and CodeCalc 2017

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 updates have been made to PV Elite and CodeCalc.

[PV Elite and CodeCalc 2017 \(Version 19.00.00.0000\)](#)

Code Updates

- Updated to support the 2015 ASME Section VIII, Division 2 code for jackets, half-pipe jackets, large openings, and heat exchangers.
- Updated to support the 2004 EN 1998-1 seismic code.
- Updated to support the 2015 IS: 875 (Part 3) seismic code.
- Updated to support the 2016 API 579-1/ASME FFS-1 code.

Configuration

- Added a new **Reduce the MDMT due to Lower Membrane Stress** option on the **Configuration** dialog in PV Elite. You can use this option to calculate the reduced MDMT value according to UCS 66.1.
- Added a **Level of Precision (Equations and Substitutions)** option to the **Configuration** dialog in PV Elite. You can use this option to specify the number of significant values (from **0** to **5**) the software displays in equations and substitutions on output reports.
- Updated PV Elite by adding an option to allow users to select whether to perform B31.3 stress checks on nozzles. The **No B31.3 Stress Checks on Nozzles (ASME)** option was added to the **Configuration** dialog, to allow users to indicate whether to analyze external and pressure loads on nozzles according to ASME B31.3. If users choose not to perform the B31.3 analysis, a message displays on the **Nozzle Calcs** output report(s) stating the analysis was not performed at the user's request.
- Updated PV Elite by adding the ability to set the impact tested temperature of tubesheet materials. Users can now enter impact test temperatures for tubesheet materials on the **Set Impact Test Exemption Temperatures** dialog box accessed from the **Configuration** dialog.

Input Processor

- PV Elite 2017 features a **News Feed** tab where you can find out product information (such as hotfixes to previous versions and the latest version of the software available). In addition, refer to the news channel for upcoming events, product training opportunities, and future webinars. Use the quick icon links at the bottom to get to the product web pages, the latest newsletter/blog postings, and Intergraph CAS social media sites.
- You can now export files to .stp format using the **Export to STEP File** option on the **File > Import/Export** menu. You can then import your .stp files into various programs, such as Solidworks.
- Added **Undo** and **Redo** buttons to the **Quick Access Toolbar** in PV Elite to allow you to quickly remove or restore modifications to your vessel in an incremental fashion.

- Updated PV Elite by replacing the text file that contains nozzle loads with a Microsoft Excel spreadsheet. The new spreadsheet allows you to more easily create user-defined nozzle load values.
- Updated PV Elite by replacing the text file that contains saddle structural data with a Microsoft Excel spreadsheet. The new spreadsheet allows you to more easily update saddle structural data. You can now select the **Excel** icon on the **Saddle Dialog** to update the SaddleData.xls file.
- Updated CodeCalc by allowing the software to perform the distance from flange calculations by pressing the **Enter** key. Previously, when users entered a value in **Distance from Flange Top to Flange/Head Intersection**, they clicked the ellipsis button to calculate the value in **Distance from Flange Centroid to Head Centerline**. The ellipsis button has been removed, and users must now press the **Enter** key to perform the calculation.
- Updated PV Elite by displaying the name of the specified material for which a temperature violation warning message displays. When you enter a temperature in **Temp. for Internal Pressure** that is higher than a material's maximum allowed temperature, PV Elite now displays the material name in the heading of the temperature violation warning message.
- Updated PV Elite by using the allowable stress of the internal temperature to determine the hydrotest stress ratio for stiffening rings.
- Added the **Set Default Tray Weight** option on the **Tray Dialog** to set the value in **Tray Weight Per Unit Area** as the default weight for each new tray set you add to a cylinder.
- Revised how PV Elite calculates the lining weight of heads to a more tangible result.

Output Reports

- Added the **Generate PDF File** option to the **Output Processor**. The new **Generate PDF File** option allows you to publish all output reports to PDF in one click.
- Updated the **Lifting Lugs** report in PV Elite to display the values used to calculate the load on the lifting lug. The **Computed Results** section of the **Lifting Lugs** report now contains values for **Total Vessel Weight (No Liquid)**, **Design Reaction Force at the Tailing Lug**, and **Design Reaction Force at the Lifting Lug**.
- Updated PV Elite & CodeCalc to display derivation calculations for the certain factors for the thickness of a floating head. The **Flohead Analysis** report now displays the last iterative calculations for the **F** and **J** factors for the required thickness of the main flange.
- Updated the nozzle/clip design pressure output string on an output report in PV Elite. Updated the **Input Echo** report to display the full name of the **Nozzle/Clip Design Pressure** options from the **Load Cases** tab.
- Updated PV Elite by only requiring groove weld details for integrally reinforced nozzles with an **F-1** ASME weld type. Previously, the software considered fillet weld details and groove weld details when analyzing these nozzle configurations. Since fillet weld details are not required for these calculations, the software has been updated to no longer consider those details for the calculations. In addition to this update, a new note was added to the **Nozzle Calcs** report to remind users that this nozzle configuration requires a full penetration weld between the nozzle and vessel shell.

- Updated PV Elite by displaying a warning message when certain tubesheet material requirements were not met. PV Elite now displays a warning message on the **ASME TS Calc** report when the thickness of your tubesheet material does not meet the requirements of UCS-6(b) (3).
- Added a note that clarifies software behavior when you define diameter limits for a nozzle analyzed according to Appendix 1-10. If you enter a **Limits (Diameter)** value on the **Nozzle Input/Analysis** dialog, the software displays a note on the **Nozzle Calcs** report for the nozzle indicating that PV Elite ignores the user-defined value in accordance with Appendix 1-10(c) of ASME VIII, Division 1.
- Updated PV Elite by removing the units from the **Thickness Correction Factor Ce per EN 13445** value on the **Fatigue Analysis** report.
- Updated PV Elite to indicate on the **Nozzle Schedule** report when a nozzle is an FVC nozzle. The **Nozzle Schedule** report now contains a **Schd or FVC Type** column, which displays the nozzle schedule or the **Connection Type** selection from the **FVC Selection** dialog. This column provides a clear indication of the type of nozzle you are analyzing.
- Updated the **MDMT Summary Report** in PV Elite to include a **Warmest MDMT** row which displays the warmest MDMT values for a material in the **Basic MDMT** and **Reduced MDMT** columns.
- Updated PV Elite to display a warning message on the **ASME FI-TS Calc** report when you enter different thicknesses between the floating tubesheet and stationary tubesheet plates.