



SYSTEMS, INC.



The *FASTEST* Solutions for Piping Design and Analysis.

Silicon Valley, Calif

checkSTRESS™

Key Benefits

- **HUGE Savings in Project Costs**
 - Produce Code-compliant Layouts Quickly by reducing Design iterations between Layout and Stress Depts.
 - Dramatically Reduce Project Execution Time
- Designers become more active participants in layout process
- Engineers spend more quality time on critical analysis details
- Available for PDMS, CADMATIC, PDS, SmartPlant, CATIA, AutoPLANT and SolidEdge
- Generates input file for CAEPIPE / CAESAR-II / PIPESTRESS



checkSTRESS

Why checkSTRESS?

- Designers route piping systems mostly considering
 - Space constraints
 - Constructability
 - Operability
 - Reparability
- Stress Engineers check stress and suggest layout changes
- Designers reroute and Stress Engineers check again and this iteration goes on “back & forth”

Why check STRESS? (continued)

- Nowadays, pressure and temperature are going up to increase plant production and efficiency
- Increased pressure increases pipe wall thickness
- Increased wall thickness increases pipe stiffness
- Increased pipe stiffness increases thermal stresses and nozzle loads
- So, designers need a tool to do a first-level “check stress” at design stage

What checkSTRESS Does

- Reads piping geometry, properties, pressure & temperature and support details from 3D Plant Design systems (currently available for PDMS, CADMATIC, PDS, SmartPlant, CATIA, AutoPLANT and SolidEdge)
- Performs stress analysis & plots in basic colors
 - Thermal stress contours (blue, green, yellow, orange and red)
 - Weight stress contours (blue, green, yellow, orange and red)
 - Thermal deflected shape
 - Weight deflected shape
 - Operating load deflected shape

What Designers Should Do

Avoid orange and red in stress contour plots

➤ To do this in thermal stresses

- Make piping flexible by:
 - Adding pipe bends and loops
 - Placing intermediate anchors to split thermal growth
 - Placing axial restraints to redirect thermal growth away from critical nozzles

➤ To do this in weight stresses

- Support piping system vertically by:
 - Spring Hangers, Constant Support Hangers
 - Rod Hangers & Resting Supports

What is checkSTRESS?

Conclusion

- **Make Piping Layout process more Enjoyable!**
- **Relieve stress for your Stress Engineers!**
- **Multiple iterations avoided between Design and Stress departments**
- **HUGE Time and Cost-savings**
- **Available for PDMS, CADMATIC, PDS, SmartPlant, CATIA, AutoPLANT and SolidEdge**
- **Avoid Manual generation of Input Files for CAEPIPE / CAESAR-II / PIPESTRESS (one-click transfer)**

Thank you for your time.

*For more information, contact 800-300-0778 or +1 408-452-8111
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