



May 7, 2014

Paulin Research Group is proud to announce our plans to participate in the HxGN Live 2014 Conference, home to the Cadworx & Analysis University (“CAU”) conference. **(June 2-5 2014 in Las Vegas)** More information on attending HxGN Live 2014 can be found at <http://hxgnlive.com/>



PRG will co-host a display booth along with our technology and development partner Dynaflow Research Group. Please visit **Booth 12**, located in the front of the Exhibit Room (“The Zone”). PRG will demonstrate new features of our FEA products NozzlePRO™ and FEATools™, while DRG will demonstrate new features of their Fluid Dynamics product BOSfluids. PRG will also have a stainless pipe assembly to compare measured, FEA, and “beam” stress results.

We will be close to the PP&M and ICAS display areas, so anyone with questions about how PRG software integrates and works with CAESAR II or PV Elite will have access to representatives from both companies.

Tony Paulin Jr. from PRG and **Niels Bos** from DRG will be at Booth 12 throughout the conference to answer questions about piping, FEA, fluid mechanics, our software, or any subject of your choosing.

While at HxGN Live 2014, PRG will give three (3) technical presentations covering important topics for both Piping and Pressure Vessel engineers. These topics will give the attendees a clear understanding of how PRG’s FEA technology can improve their design and analysis work, and in many cases, help resolve problems that cannot be properly addressed by standard Code-based methods or tools.

Summary of PRG presentations at HxGN Live 2014

Session	Day & Date	Time	Room	Presenter	Presentation Title
2903	Mon – 2 June	1:30 PM	TBD	Tony Paulin	Collecting SIFs from FEA
2911	Mon – 2 June	3:30 PM	TBD	Ryan Metcalf	New Rules for Occasional Loads on Nozzles: Comparison of Code Rules and FEA Analysis
2915	Tue – 3 June	3:30 PM	TBD	Tony Paulin	Ratcheting and Sustained Stress Indices for Piping System Components with CAESAR II

*- Detailed information for each of these presentations is provided on the following page.

Finally, PRG, DRG, & Intergraph will be hosting a meeting for Owner/Operator companies at the conference to discuss how FEA technology can reduce project costs and improve design accuracy and plant safety. If you are interested in joining this meeting, please send an email to sales@paulin.com.

We hope to see you at HxGN Live 2014, at Booth #12, or at one of our presentations!

Session 2903 Collecting SIFs from FEA

Date & Time Mon 2 June 1:30 PM

Abstract This presentation demonstrates how to use FEA results to develop stress intensification factors (SIFs) and flexibility factors (k's) for piping components. Basic SIFs are found in fatigue tests, and then equations are developed to extend the tested SIFs to a wider range of geometries and materials. The original SIFs were developed by Markl in the 1950s before finite element analysis was established as a practical tool. Additional testing and extensive comparisons with finite element data by Rodabaugh and Wais (EPRI 110996) and Paulin (ASME ST LLC 07-02) have resulted in relatively standard procedures that can be used to produce confident SIFs and flexibility factors for use in pipe stress programs.

Presenter Tony Paulin – CEO, Paulin Research Group

Session 2911 New Rules for Occasional Loads on Nozzles: Comparison of Code Rules and FEA Analysis

Date & Time Mon 2 June 3:30 PM

Abstract Since the publication of 2007 ASME Section VIII Div. 2, the occasional load approach has been changed in the Codes. This presentation will discuss the reason for the changes and will show how to employ these rules when performing a piping or pressure vessel analysis. The differences between design by correlation (Code rules) and design by FEA will be discussed and multiple examples will be presented. New features in NozzlePRO™ will be demonstrated that show how the ASME Section VIII Div. 2, Part 5 rules must be properly interpreted for primary load evaluation of piping loads on vessel nozzles.

Presenter Ryan Metcalf – Director of Sales & Marketing, Paulin Research Group

Session 2915 Ratcheting and Sustained Stress Indices for Piping System Components with CAESAR II

Date & Time Tue 3 June 3:30 PM

Abstract Sustained stress indices (SSIs) in the B31.3 piping code and in ratcheting each involve plasticity mechanisms. Recent tests and FEA analysis show how sustained stress indices can be consistently developed and how ratcheting can be adequately predicted. The recommended B31 basis is shown to satisfy the requirements of ASME VIII Division 2, Part 5. This presentation will clearly define SSIs and give typical values that can be used in B31.3 pipe stress analysis.

Presenter Tony Paulin – CEO, Paulin Research Group