Veridian™

Vibration screening assessment and database

Veridian is Wood's powerful web-based screening tool used to identify and assess vibration risks in process piping systems, regardless of the scale or size of an asset. It can integrate with many integrity management programmes and identifies and mitigates potential risks to piping systems designs.

It's free for owners, operators and engineering consulting firms to use, works with existing integrity management systems and will:

- Provide detailed design specifications of piping systems to identify and eliminate potential risks
- Prioritise commissioning and start-up inspection programmes
- Undertake small-bore piping assessments
- Support operations during management of change (equipment, process, etc)
- Additional add-ons are available to track known issues until mitigation, resolution and closeout

Risk evaluation

Veridian identifies and evaluates potential issues that can result in piping vibration fatigue failures, such as:

- Flow-induced turbulence, including multiphase excitation
- High frequency acoustic energy created by pressure reducing devices (AIV, AIE)
- Flow-induced pulsations caused by deadlegs in the piping system (FIP or FIE)
- Pulsations caused by rotating and reciprocating machinery
- Mechanical excitation from connected or nearby machinery
- Transient-caused valve operation (surge, water hammer, relief valve reaction forces)
- Cavitation and flashing of liquids

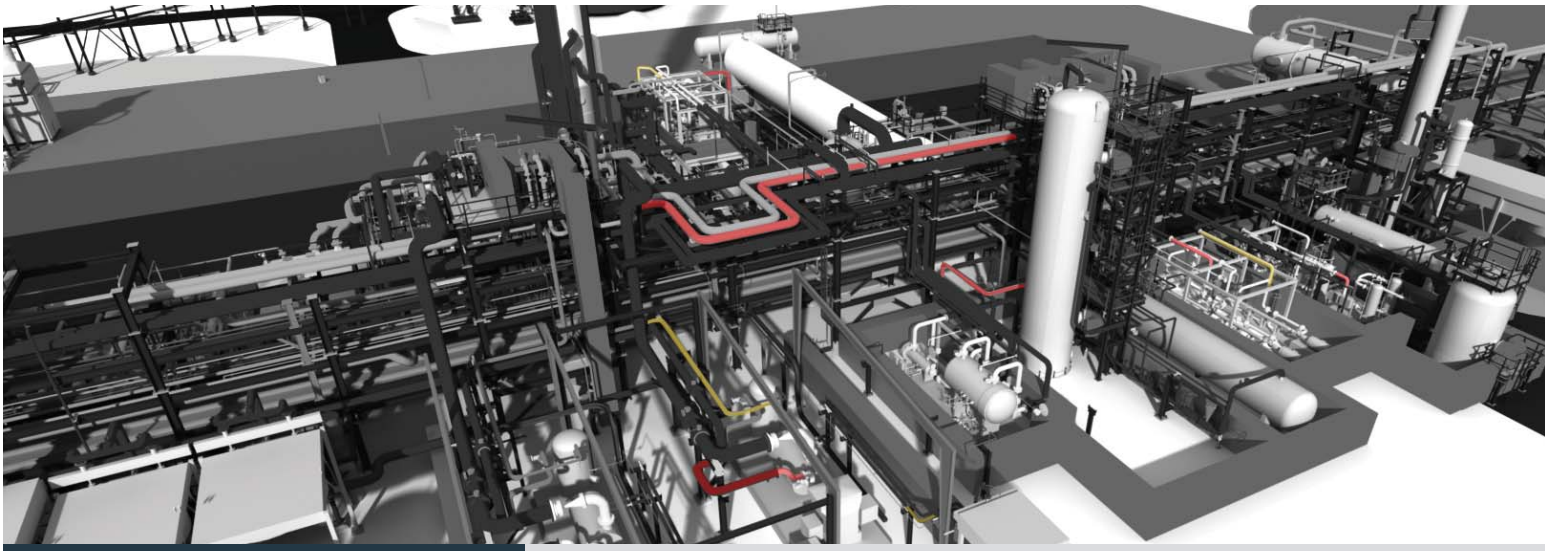
What types of facilities are covered?

Veridian can evaluate piping vibration risks for small and large facilities alike, no matter how much or how little piping is involved. For example, the tool can be used for a single pump station, an offshore platform, a midstream facility, an LNG site or a large chemical plant.

What areas of my facility are covered?

All facility piping can be evaluated using Veridian. There is a higher risk of vibration-induced fatigue in piping systems with:

- Higher-velocity fluid
- Multiphase or slug flow
- Poor or inadequate dynamic support
- Large number of small-bore connections
- Reciprocating equipment
- Valves operating with significant pressure drop
- Fast acting valves
- Flare systems



Assessment and mitigation

Veridian was created by engineers directly involved in the development of the Energy Institute's 'Avoidance of Vibration Induced Fatigue Failure in Process Pipework' guidelines. The team continues to provide ongoing updates.

Reasons for using Veridan

Veridian supports and enhances existing piping integrity programmes. Utilising the information already collected and available, it applies a simple but powerful method to evaluate the risk of piping vibration, plans field vibration inspections and tracks risk variations with a single, easy-to-use dashboard; best of all, it's free to use.

Benefits

- Free to use for anyone working with piping systems
- Web-based, providing ease of access and collaboration
- Data is secure and confidential
- Provides improved efficiency and reliability over spreadsheets or hand calculations
- Designed and used by industry experts, with proven and reliable results
- Continually updated to ensure it meets current standards and regulations
- Meets the Energy Institute AVIFF guidelines for process pipework and pending subsea guidelines
- Provides best-practice management of vibration risks, providing qualitative and quantitative data
- Supports reduced design, construction and commissioning costs

For more information on Veridian and to register for use please visit:

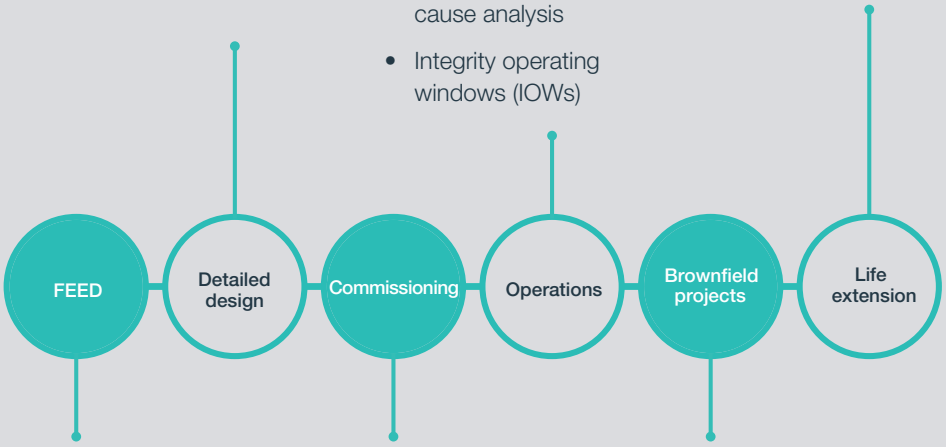
www.woodplc.com/veridian

Life of field services

- Assess piping designs
- Determine high-risk areas
- Determine detailed analysis requirements (eg, level 2 or 3)

- Small-bore piping assessments
- Integrity programmes and RBI studies
- Troubleshooting; root cause analysis
- Integrity operating windows (IOWs)

- RBI studies
- Integrity management programmes



- Assess piping systems for vibration risks
- Compare different design options and concepts
- Specify criteria for detailed design

- Identify inspection and measurement requirements(work packs)
- Small-bore piping assessments
- Troubleshooting
- Establish initial integrity operating windows

- Assess risks due to process or operational changes
- Management of change

Additional service capability

Veridian AM is a premium anomaly manager used to track, assign and close out vibration irregularities in a collaborative system. Veridian AIV is used as part of our advanced acoustic fatigue service to develop more robust and complex designs for our customers.