

## Discussion Group P1/T1: Monitoring Vibration and Other Critical Machine Conditions

### Leaders:

- William Marscher (Mechanical Solutions, Inc.)
- Juan Gamarra (Mechanical Solutions, Inc.)
- Ron Adams (Sulzer Pumps)
- Dag Calafell (ExxonMobil)
- Simon Bradshaw (ITT Goulds)
- Maki Onari (Mechanical Solutions, Inc.)
- Jack Claxton (Patterson Pump Company)
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- Morg Bruck (HMIC)
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### Suggested Topics:

- Condition monitoring methods
- Effectiveness of condition monitoring on rotating equipment
- Value of, and ROI of, condition-based monitoring
- Vertical pump monitoring
- Below ground monitoring in vertical pumps
- Vertical pump vibration standards
- Vertical turbine pump structural resonance analysis
- Vibration test methods and proper use
- Standard locations for vibration measurement on horizontal machinery
- Wireless devices: radio noise, effectiveness, experiences, security
- Troubleshooting methods and fix options
- Operating Deflection Shapes and integration with condition-based monitoring
- Finite element analysis application in support of selection, and troubleshooting
- Rotordynamics
- Hydraulically-induced vibration: structural, system, rotor
- Hydraulic and aerodynamic system issues, including acoustics
- Measurement of severity of unsteady cavitation conditions
- Effect of high GVF (gas volume fraction) in centrifugal pumps
- Mechanical installation (e.g. piping, foundation, alignment) issues
- Modular pump installations, i.e. experience with non-grouted baseplates
- Seals and bearings – how they affect vibration