

## **DG7 - Turbomachinery and Pump Vibrations**

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This group will discuss plant machinery vibration detection, monitoring, and diagnosis, from a Plant O&M point-of-view. All attendees will be encouraged (but not required) to participate in discussions, and contribute topics worthy of discussion. Likely topics presently suggested, which will be affirmed or rejected by attendee vote, include the following:

- Condition monitoring vibration sensors and methods
- Effectiveness of vibration condition monitoring on rotating equipment for detecting problems
- “Diagnostics” versus “prognostics”
- Value of, and ROI of, condition-based monitoring of vibration
- Vertical pump monitoring, including below ground monitoring
- Vibration standards for various pumps and turbomachinery types, sizes, and applications
- Vibration test method options, and their proper selection and use
- Standard locations for vibration measurement on machinery
- Wireless devices: radio noise, effectiveness, experiences, security
- Troubleshooting methods for typical vibration problems, and fix options
- Operating Deflection Shapes and integration with condition-based monitoring
- Finite element analysis application in support of machinery selection and troubleshooting
- Rotordynamics analysis use in machinery selection and troubleshooting
- Hydraulically-induced vibration: structural, system, rotor, acoustic
- Measurement of presence, location, and severity of pump cavitation
- Effect of high GVF (gas volume fraction) in centrifugal pumps
- Mechanical installation (e.g. piping, foundation, alignment) issues affecting vibration
- Seal and bearing effects on vibration, and vibration effects on bearings and seals