SwRI
SOUTHWEST RESEARCH INSTITUTE

Pulsations and Vibrations in Piping Systems
2-Day Short Course

Southwest Research Institute
6220 Culebra Rd. • San Antonio, TX
April 20 - 21, 2017

B263 – First Floor Training Room
Day 1: 8:00 a.m. – 5:00 p.m.
Day 2: 8:00 a.m. – 4:30 p.m.

Course Topics

Pulsation sources in piping systems

- Reciprocating and screw compressors and PD pumps
- Strouhal at branches – flow induced pulsations (FIP)
- Blade pass frequencies in turbomachinery
- Acoustic induced vibration (AIV)
- Flow induced turbulence
- Valve noise/flutter (and piping system interaction)

Piping acoustic and mechanical responses

Pulsation modeling – 1D and 3D

Torsional Rotordynamic Analysis

Mechanical manifold, skid, and small bore piping design guidelines

Recip/centrifugal interaction

API 618 requirements

Pulsation and vibration control – absorbers, damping mechanisms, clamps and supports

"Hands-on" demo in pulsation measurement at SwRI Research Lab

Multiple case studies

Field test cases on high pulsation/vibration installations

Course Overview

This introductory course covers applied pulsation and vibration problem solving, field examples, troubleshooting, and failure mitigation. The course is intended for engineers, operators, and technicians working with gas compression or liquid pumping piping systems. Instruction will be provided by experienced SwRI staff. The class includes practical hands-on exercises, case studies, and machinery demonstrations, along with a roundtable discussion with pulsation/vibration experts.

Cost

The short course cost is $750 USD per registrant. Registration includes two days of course instruction, a training handbook on a flash drive, class exercises, and lunch.

For more information, please contact:

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